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Phoenix, AZ 85009

Upper East Fork Cave Creek
Detention Basin #5
Hydraulic Analysis

NBS LOWRY

ENGINEERS & PLANNERS

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Detention Basin #5
Hydraulic Analysis

Prepared For:

City of Phoenix, Arizona

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Upper East Fork Cave Creek Detention Basin #5
Hydraulic Analysis

I. PROJECT DESCRIPTION

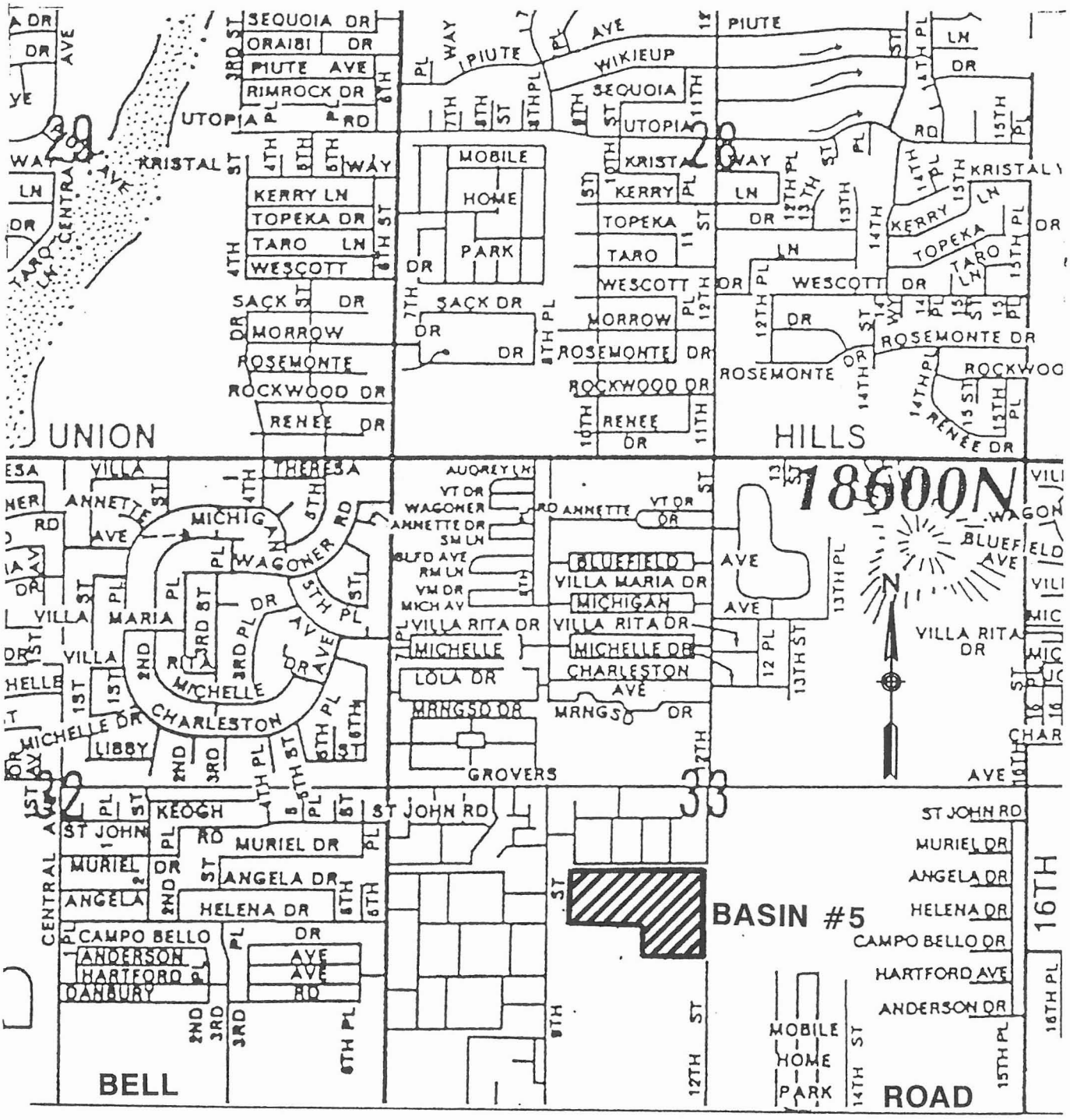
The Upper East Fork Cave Creek Detention Basin #5 is designed as part of the implementation of the Drainage Master Plan for the Upper East Fork Cave Creek watershed adopted by the City of Phoenix and the Flood Control District of Maricopa County and presented in the Upper East Fork Cave Creek Area Drainage Master Study, October 1987 (ADMS).

The basin extends from 9th Street to 12th Street in the vicinity of Campo Bello Drive in Phoenix, Arizona. The purpose of the basin is to reduce the 100 year peak discharge to the historic 2 year discharge to allow the basin to drain into the City of Phoenix 2 year storm drain system in 9th Street. Upon completion of project construction the basin is to be incorporated into the City of Phoenix Park system for routine maintenance. The project location is shown on **Figure 1**.

Basin #5 designed by

The construction plans and specifications for Detention Basing #5 have been prepared by Project Engineering Consultants (PEC). This report summarizes a hydraulic analysis of the basin design as presented in City of Phoenix project ST-896837 "Detention Basin No. 5 Storm Drain Plan," prepared by PEC and dated January 3, 1992. The purpose of the analysis is to ensure that the project design meets the design objectives set forth in the ADMS and the Upper East Fork Cave Creek Detention Area Sizing Study Engineering Design Descriptions, June 1989 which presents a preliminary design for detention basin 5 and other basins for conveying the 100 year storm runoff in a manner that is coordinated with the remaining elements of the planned system.

Design calculations and descriptions of the major project elements follow:



PROJECT LOCATION

NBS LOWRY

FIGURE 1

II. DESIGN CRITERIA

A. Basin Grading

Sideslopes	4:1	Granite areas
	5:1	Turf areas
Walking grades	12:1 max. (8.3%)	
Equest. grades	6.7:1 max. (15%)	
Bottom slope	1	percent min.

B. Pipes

Manning's n	0.013	(Concrete)
	0.015	(Cast-in-place concrete)
Min. Velocity	5	fps (desirable)
	2	fps (Absolute)
Diameter	18	inch min.

C. Basin outfall

Peak Inlet Discharge:

Peak Outlet Discharge	
Desired	325 cfs
Attained	340 cfs

The basin outfall discharges into a 108 inch cast-in-place concrete stormdrain in 9th Street.

D. Storage

Freeboard	0.5	ft. min.
Drain Time	36	hrs. max.

III. HYDROLOGY

A. Methodology

The hydrology was originally developed using the U.S. Soil Conservation Service (SCS) TR-20 Project Formulation - Hydrology computer package as part of the Upper East Fork Cave Creek Area Drainage Master Study, in October 1987. The development of the TR-20 model is described in detail in that report. The ADMS model is used for this study with modifications in the routing parameters to account for final design and configuration of stormdrains, etc. Parameters used in preparing the TR-20 model for this study are summarized below.

Rainfall - The City of Phoenix design rainfall criteria was used, which consists of rainfall frequency-depth-duration values and a 24-hour time distribution of rainfall.

Losses - Losses are estimated by use of the curve number which is a variable that indicates the runoff potential for a subwatershed based on the hydrologic soil cover complex. The soil cover complex is a combination of the soil type and the land use and treatment classes. Procedures for estimating curve numbers are contained in the SCS National Engineering Handbook, Section 4 - Hydrology for natural watersheds and in SCS TR-55 Urban Hydrology for Small Watersheds for urban watersheds. Soils in the East Fork of Cave Creek are primarily type D in the higher elevations and type B in the lower alluvial floodplain areas. Soil types were determined from the SCS Soil Survey of Maricopa County, Arizona.

Curve numbers were assigned to each soil cover complex. In areas with mixed land use, a composite curve number was developed based on the percentage of the total area made up of each land use. A minimum curve number of 95 was used in areas having slopes in excess of 10%. Future condition curve numbers were developed based on zoning.

Unit Hydrograph - The SCS dimensionless unit hydrograph is used in TR-20 which requires the time of concentration as the only input parameter to develop the unit hydrograph. Time of concentration is defined as the time it takes for runoff to travel from the hydraulically most distant part of the storm area to the watershed outlet or other point of reference downstream. Times of concentration were estimated using the Upland method for overland flow conditions and gutter flow times from the City of Phoenix Stormdrain Design Manual for channelized flow conditions. A minimum time of concentration of 10 minutes was used.

Reach Routing - The Modified Attenuated Kinematic (Att-Kin) routing method was used which takes into account channel storage and hydrograph attenuation as the hydrograph is routed through the reach. With the Att-Kin method the discharge-flow area relationship for simple cross sections (rectangular, triangular,

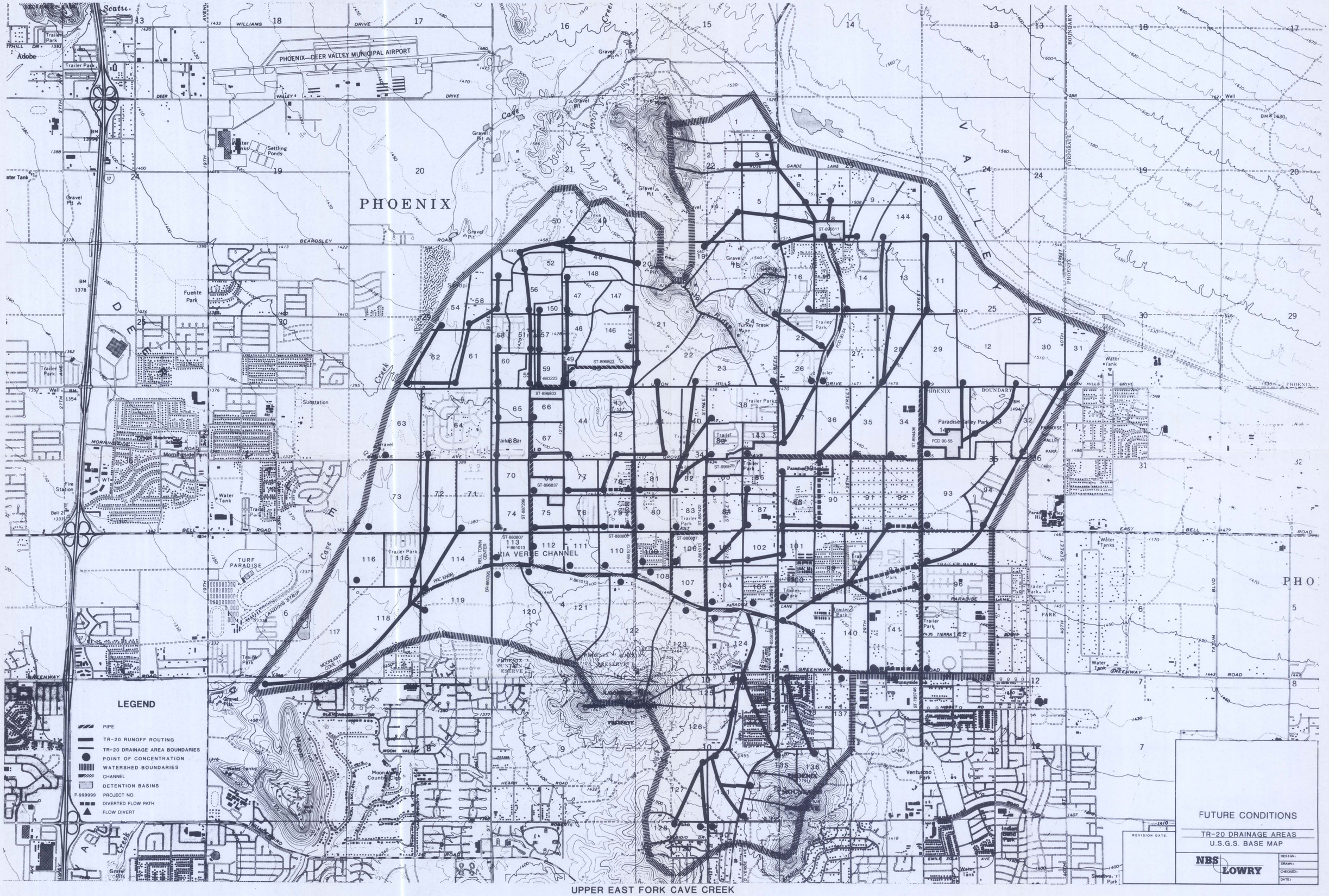
trapezoidal) is fit by a power curve function of the form $Q=XA^m$, where Q and A are the discharge and area at any distance and time. The coefficient X and the exponent m are specified by the user based on the channel dimensions, roughness, and slope.

B. Subarea Map

The TR-20 subarea map is attached as **Figure 2**, showing the drainage subarea boundaries and points of concentration as well as the reach routing paths used.

C. Results

The computed peak discharges for the 100-year storm analysis are summarized on **Figure 3**. The TR-20 computer input and output listings are contained in the **Appendix**.



UPPER EAST FORK CAVE CREEK
FEMA CLOMR SUBMITTAL

FIGURE 2

IV. HYDRAULICS

The objective of the hydraulic analysis is to establish the stage-storage-discharge relationship for Detention Basin 5 to be utilized in the TR-20 program for hydrologic routing of 100-year frequency storm flows through the basin. Additionally, the effect of the computed water surface elevations in the basin on the upstream stormdrain in 9th Street are computed. The upstream stormdrain hydraulic grade line effects the discharge characteristics of detention basin 2 at 9th Street and Union Hills Drive. An analysis of detention basin 2 is not included in the scope of work for this analysis, however a hydraulic grade line calculation is made for the 100 year peak discharge as a check on the performance of basin 2.

A. 9th Street Stormdrain HGL (Greenway Channel to D.B.#5)

To develop a stage-discharge rating curve for Basin 5, the downstream system was evaluated for a range of discharges. To account for hydrograph timing in establishing a starting HGL elevation for the 9th Street stormdrain and to properly account for downstream lateral discharges, A hydraulic grade line analysis was made for the 2-, 10-, 25-, 50-, and 100-year storms. A HEC-2 model for the Greenway Channel was used with the computed 2-, 10-, 25-, 50-, and 100-year discharges to establish the starting hydraulic grade line elevation for the 9th Street calculations. The computed discharges in the 9th Street system were then used with the associated Greenway Channel water surface elevation to compute the hydraulic grade line in the 9th Street stormdrain to the outlet of Detention Basin 5. The five hydraulic grade line elevations were then plotted as a function of basin outlet discharge. The resulting curve was then used to establish downstream hydraulic grade line elevations for the basin outlet rating curve analysis. The computed 2-, 10-, 25-, 50-, and 100-year discharges and associated hydraulic grade line elevations and the basin outlet discharge vs. downstream hydraulic grade line plot is shown on **Figure 3**.

B. Basin Outlet Rating Curve (Stage-Storage-Discharge)

There are two primary outlets for Detention Basin 5. The first, and larger outlet is at the northwest corner of the basin at 9th Street and the second, smaller outlet is at the east side of the basin to collect inflows from the east at 12th Street. The basin outlet stage-discharge relationship was established by computing the basin water surface elevation for a range of basin discharges. The distribution of flow between each outlet system was determined by computing the hydraulic grade line in each outlet system for various combinations of discharges with the sums equalling the total outlet discharge until the computed upstream water surface elevation for each system matched. The resulting stage vs total outlet discharge relationship was then used for the TR-20 hydrologic routing. The hydraulic grade line calculations for the range of discharges and the resulting stage-discharge plot is shown on **Figure 4**.

The stage-storage relationship was developed by digitizing the basin design contours and computing the total

basin volume at even foot increments throughout the depth of the basin. The stage-storage rating curve is shown in **Table 1**.

TABLE 1 - STAGE-STORAGE RELATIONSHIP

Elevation (ft)	Volume (ac-ft)
1378	0.059
1379	0.504
1380	2.59
1381	7.80
1382	16.23
1383	27.98
1384	41.94
1385	56.87
1386	72.56
1387	89.16
1388	106.75
1389	125.39
1390	145.15

C. 9th Street Stormdrain HGL (D.B.#5 to D.B.#1)

Based on the stage-storage-discharge relationship just described and the TR-20 analysis, the 100 year water surface elevation in Detention Basin #5 is computed to be 1388.84 ft. The 9th Street stormdrain system was analyzed for the 100 year peak discharge using the Basin 5 water surface elevation as the starting water surface elevation. A Storm Plus hydraulic model was developed based on the plans for project ST-887299 9th Street Major Trunk Storm Sewer, Bell Road to Union Hills Drive, March 10, 1993 prepared by Evans, Kuhn & Associates. The Storm Plus output listing is contained in the **Appendix**. The computed 100 year HGL elevation at the upstream limit of the 9th Street Stormdrain is 1403.1 ft.

FIGURE 3 – BASIN 5 OUTLET HGL

Frequency (yrs)	Discharge (cfs)			CWSEL/HGL Elev	
	GW Chann (Sta. 142+25)	9th Street GW – Bell	9th Street Bell to DB5	GW Chann (Sta. 142+25)	DB5
2	Q_2 = 1313	191	136	1372.05	1373.08
10	Q_{10} = 3637	348	261	1373.71	1377.36
25	Q_{25} = 5083	452	309	1374.70	1380.79
50	Q_{50} = 6202	528	341	1375.47	1383.73
100	Q_{100} = 7356	592	369	1376.23	1386.58

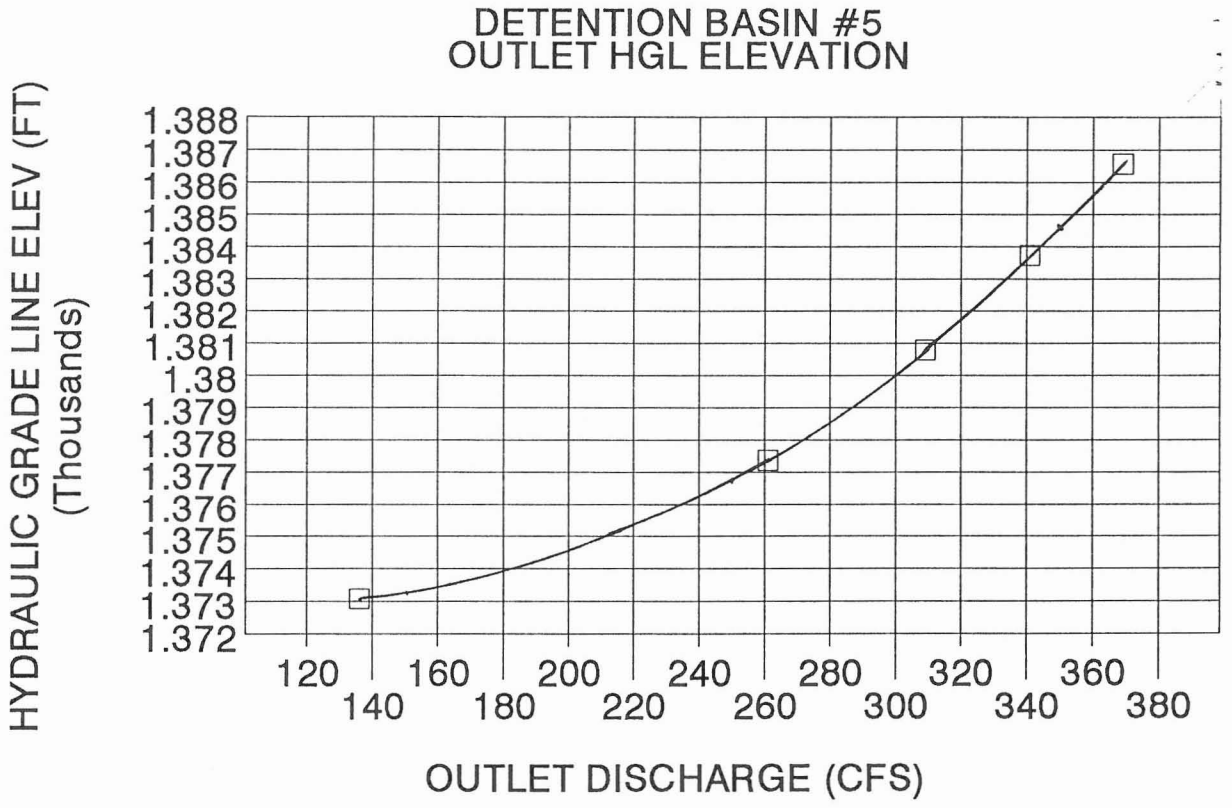


FIGURE 3

FIGURE 4 – BASIN 5 STAGE–DISCHARGE

Q (CFS)	ELEV
0	0
150	1376.3
200	1377
250	1379.5
300	1384
350	1390.1
400	1396.7

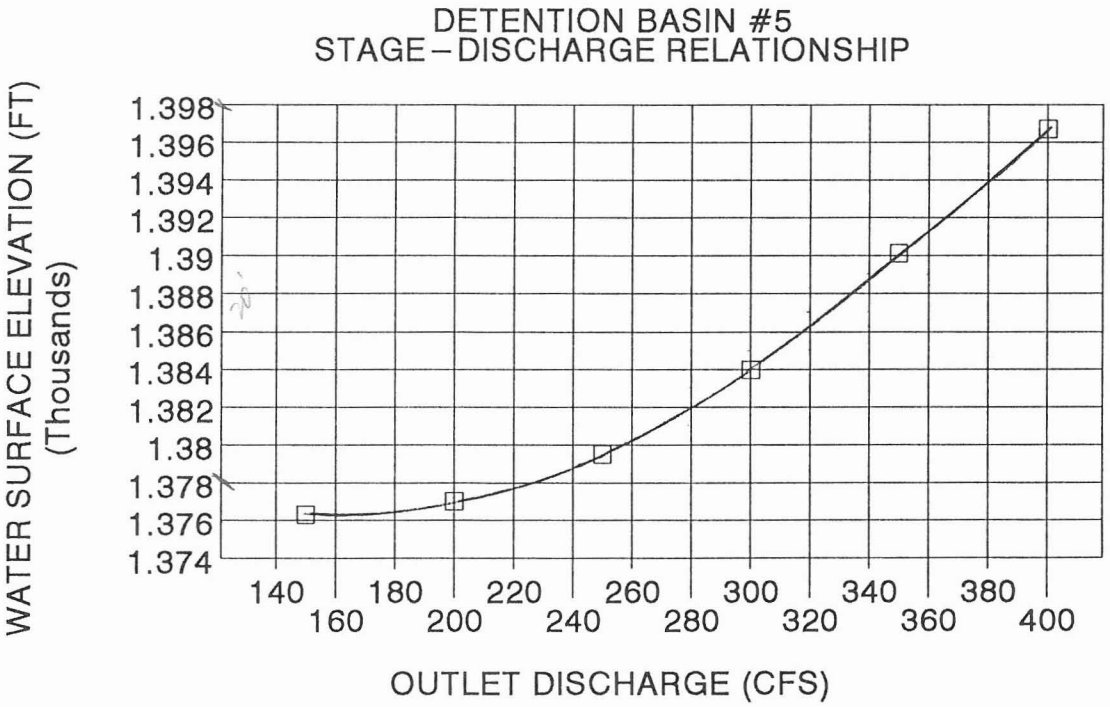


FIGURE 4

Diam, Do = 9 ft

Length, L = 588.54 ft.
Diam, D = 5.5 ft.
Mann, n = 0.015

			(9th St.)	Reach A (9th St)				
Qo (cfs)	HGLo (ft)	Vo (fps)	Qa (cfs)	Va	Junct Loss	Inlet loss	Sf	WSEL (ft)
150	373.3	2.36	150	6.31	−0.45	0.31	0.0027	376.0
200	374.5	3.14	187.1625	7.88	−0.64	0.48	0.0041	377.0
250	376.7	3.93	200.2365	8.43	−0.53	0.55	0.0047	379.5
300	380	4.72	240.1909	10.11	−0.76	0.79	0.0068	384.0
350	384.6	5.50	280.2237	11.79	−1.04	1.08	0.0093	390.1
400	389.5	6.29	320.2545	13.48	−1.36	1.41	0.0121	396.7

Length, L =	308 ft.			Length, L =	532 ft.				Length, L =	419 ft.					
Diam, D =	5 ft.			Diam, D =	2.5 ft.				Diam, D =	2.5 ft.					
Mann, n =	0.012			Mann, n =	0.012				Mann, n =	0.012					
Angle =	90 deg			Angle =	30 deg				Angle =	90 deg					
	Reach B (To 12th St)			Q inlet					Q inlet						
Qb1	Vb	Sf1	HGL 1		Junct Loss	Qb2	Sf2	HGL 2		Junct Loss	Qb3	Sf3	HGL 3	Inlet Loss	WSEL (ft)
0.00	0.00	0.0000	372.85	0.00	0.00	0.00	0.0000	372.85	0.00	0.00	0.00	0.0000	372.85	0.00	376.0
12.84	0.65	0.0000	373.87	12.75	−0.20	0.09	0.0000	373.67	0.00	0.00	0.09	0.0000	373.67	0.00	377.0
49.76	2.53	0.0003	376.27	18.49	−0.68	31.27	0.0050	378.22	26.79	1.23	4.48	0.0001	379.50	0.01	379.5
59.81	3.05	0.0004	379.38	22.18	−0.98	37.63	0.0072	382.21	36.84	1.82	0.79	0.0000	384.04	0.00	384.0
69.78	3.55	0.0006	383.75	25.88	−1.33	43.90	0.0098	387.61	42.98	2.48	0.92	0.0000	390.10	0.00	390.1
79.75	4.06	0.0008	388.39	29.57	−1.74	50.17	0.0127	393.44	49.12	3.24	1.05	0.0000	396.68	0.00	396.7

```
******************80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY******************

JOB TR-20                                          SUMMARY   NOPLOTS
TITLE 000 EAST FORK CAVE CREEK - ANALYSIS OF DETENTION BASIN #5
TITLE 000 JOB NUMBER:  P79-086-016            FILENAME: BASIN5.DAT
 5 RAINFL 1            .0208
 8         0.          .004        .008        .0130       .018
 8         .022        .026        .031        .035        .04
 8         .044        .048        .053        .057        .062
 8         .066        .071        .075        .080        .093
 8         .107        .120        .140        .170        .500
 8         .830        .860        .880        .893        .907
 8         .920        .924        .928        .933        .937
 8         .942        .947        .951        .956        .960
 8         .964        .969        .973        .978        .982
 8         .987        .991        .995        1.00        1.00
 9 ENDTBL
 2 XSECTN   006        1.0
 8                     1502.       0.0         0.0
 8                     1502.4      3.7         2.1
 8                     1502.8      13.3        5.1
 8                     1503.2      29.5        9.1
 8                     1503.6      53.4        14.1
 8                     1504.0      85.8        20.0
 8                     1504.4      100.7       30.8
 8                     1504.8      169.0       50.3
 8                     1505.2      289.0       78.5
 8                     1505.6      469.8       115.4
 8                     1506.0      470.9       161.1
 8                     1506.4      952.6       295.5
 8                     1506.8      1764.7      462.7
 8                     1507.2      2878.8      662.8
 8                     1507.6      4328.4      895.6
 8                     1508.0      6145.9      1161.3
 8                     1508.4      8331.5      1460.9
 8                     1508.8      10956.2     1795.8
 9 ENDTBL
 2 XSECTN   008        1.0
 8                     1494.0      0.0         0.0
 8                     1494.3      7.4         5.7
 8                     1494.6      23.9        12.0
 8                     1494.9      47.8        18.8
 8                     1495.2      78.9        26.3
 8                     1495.5      117.0       34.3
 8                     1495.8      162.2       42.9
 8                     1496.1      165.4       53.5
 8                     1496.4      175.4       84.2
 8                     1496.7      302.7       140.5
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**********80-80 LIST OF INPUT DATA (CONTINUED)**********

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8                    1497.6      1343.8      463.0
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8                    1498.2      2837.4      803.3
8                    1498.5      3901.4      998.3
8                    1498.8      5131.8      1206.2
8                    1499.1      6532.4      1426.8
8                    1499.4      8107.5      1660.4
8                    1499.7      9861.7      1906.7
9 ENDTBL
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8                    1452.6      50.6        19.9
8                    1453.0      119.3       34.0
8                    1453.2      162.1       41.3
8                    1453.4      210.4       48.7
8                    1453.6      263.8       56.3
8                    1453.8      322.2       64.1
8                    1454.0      385.5       72.0
8                    1454.2      420.0       86.0
8                    1454.4      456.8       100.3
8                    1454.6      566.6       114.7
8                    1454.8      685.9       129.2
8                    1455.0      814.4       143.9
8                    1455.2      952.0       158.8
8                    1455.4      1098.3      173.9
8                    1455.6      1183.6      189.8
8                    1455.8      1357.3      206.7
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8                    1456.2      1740.2      240.7
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8                    .2          9.5         5.8
8                    .4          26.9        11.6
8                    .6          49.5        17.4
8                    .8          76.2        23.2
8                    1.0         106.4       29.
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8                    1.4         176.3       40.6
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8                    1.2        77.2       19.2
8                    1.4        97.3       22.4
8                    1.6        118.8      25.6
8                    1.8        141.8      28.8
8                    2.0        166.1      32.0
8                    2.2        191.6      35.2
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8                    1430.2     469.2      273.6
8                    1430.4     1000.2     438.7
8                    1430.6     1689.0     611.1
8                    1430.8     2526.0     791.0
8                    1431.0     3505.8     978.2
8                    1431.2     4625.3     1172.9
8                    1431.4     5882.7     1374.9
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8                    1.         167.       38.
8                    1.5        327.       57.
8                    2.         529.       76.
8                    2.5        767.       95.
8                    3.         1039.      114.
8                    3.5        1345.      135.
8                    4.         1684.      156.
8                    4.5        2053.      177.
8                    5.         2451.      198.
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**********80-80 LIST OF INPUT DATA (CONTINUED)**********

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8                    1417.9     392.9      223.9
8                    1418.1     737.3      347.5
8                    1418.3     1217.8     483.0
8                    1418.5     1805.5     628.1
8                    1418.7     2500.2     782.6
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8                    .6         62.        17.
8                    1.2        197.       34.
8                    1.8        387.       50.
8                    2.4        625.       67.
8                    3.         906.       84.
8                    3.6        1231.      103.
8                    4.2        1596.      123.
8                    4.8        2005.      145.
8                    5.4        2453.      166.
8                    6.         2938.      188.
8                    6.6        3457.      210.
8                    7.2        3990.      232.
8                    7.8        4583.      256.
8                    8.4        5209.      280.
8                    9.         5867.      304.
8                    9.6        6557.      328.
9 ENDTBL
2 XSECTN   108       1.
8                    0.         0.         0.
8                    .6         83.        20.
8                    1.2        263.       40.
8                    1.8        517.       59.
8                    2.4        835.       79.
8                    3.         1211.      99.
8                    3.6        1644.      121.
8                    4.2        2131.      144.
```

```
8                    4.8        2675.      169.
8                    5.4        3270.      193.
8                    6.         3913.      218.
8                    6.6        4602.      243.
8                    7.2        5314.      268.
8                    7.8        6099.      295.
8                    8.4        6927.      322.
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8                    9.6        8709.      376.
8                    10.2       9616.      404.
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8                    2.         594.       78.
8                    2.5        862.       98.
8                    3.         1168.      117.
8                    3.5        1513.      139.
8                    4.         1893.      160.
8                    4.5        2308.      182.
8                    5.         2755.      203.
8                    5.5        3233.      225.
8                    6.         3741.      246.
8                    6.5        4274.      270.
8                    7.         4846.      293.
8                    7.5        5447.      317.
8                    8.         6076.      340.
8                    8.5        6732.      364.
8                    9.         7415.      387.
8                    9.5        8109.      413.
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2 XSECTN   111       1.
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8                    1.         223.       32.
8                    1.5        438.       48.
8                    2.         707.       64.
8                    2.5        1025.      80.
8                    3.         1389.      96.
8                    3.5        1799.      114.
8                    4.         2253.      132.
8                    4.5        2747.      150.
8                    5.         3280.      168.
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**********80-80 LIST OF INPUT DATA (CONTINUED)**********

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8                    6.        4456.     204.
8                    6.5       5091.     224.
8                    7.        5775.     244.
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8                    8.        7246.     284.
8                    8.5       8032.     304.
8                    9.        8849.     324.
8                    9.5       9675.     346.
9 ENDTBL
2 XSECTN   124       1.
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8                    1.        171.      32.
8                    1.5       335.      48.
8                    2.        542.      64.
8                    2.5       786.      80.
8                    3.        1065.     96.
8                    3.5       1379.     114.
8                    4.        1726.     132.
8                    4.5       2105.     150.
8                    5.        2514.     168.
8                    5.5       2950.     186.
8                    6.        3415.     204.
8                    6.5       3902.     224.
8                    7.        4426.     244.
8                    7.5       4977.     264.
8                    8.        5553.     284.
8                    8.5       6155.     304.
8                    9.        6781.     324.
9 ENDTBL
3 STRUCT     08
8                    1487.84   0.0       0.000
8                    1488.0    1.0       0.021
8                    1489.0    7.00      1.189
8                    1490.0    26.0      5.893
8                    1491.0    80.0      14.491
8                    1492.0    125.0     25.114
8                    1493.0    162.0     36.539
8                    1494.0    191.0     49.18
8                    1495.0    216.0     61.83
8                    1496.0    241.0     74.474
8                    1497.0    265.0     90.000
9 ENDTBL
3 STRUCT     33
8                    1462.     0.        0.
8                    1464.     24.       0.86
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
8                    1465.      50.        3.82
8                    1466.      73.        10.79
8                    1467.      81.        22.49
8                    1468.      87.        37.97
8                    1469.      93.        55.54
8                    1470.      99.        73.83
9 ENDTBL
3 STRUCT      43
8                    1417.      0.         0.
8                    1418.0     30.        .29
8                    1418.3     80.        .77
8                    1419.0     240.       2.11
8                    1419.4     250.       6.7
8                    1419.8     270.       10.6
8                    1420.3     300.       22.1
8                    1420.8     320.       38.8
8                    1421.0     321.       48.9
8                    1421.3     340.       59.8
8                    1421.6     360.       71.0
8                    1422.2     390.       92.9
8                    1422.5     400.       103.1
8                    1423.5     430.       128.7
8                    1424.8     450.       149.7
8                    1426.0     460.       160.2
8                    1427.1     470.       165.5
8                    1428.1     480.       168.6
8                    1429.0     485.       170.6
8                    1429.9     490.       172.3
9 ENDTBL
3 STRUCT      59
8                    1389.0       0.0      0.00
8                    1391.0      30.0      0.03
8                    1393.0      90.0      0.12
8                    1395.0     180.0      3.02
8                    1397.0     225.0      10.16
8                    1399.0     263.0      18.48
8                    1401.0     296.0      27.69
8                    1403.0     326.0      37.82
8                    1405.0     353.0      48.87
8                    1407.0     378.0      60.86
8                    1407.5     385.0      63.02
9 ENDTBL
3 STRUCT      69
8                    1370.0     0.         0.
8                    1378.0     226.       0.059
8                    1379.0     242.       0.504
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
8                    1380.0      257.        2.591
8                    1381.0      268.        7.795
8                    1382.0      280.        16.23
8                    1383.0      291.        27.98
8                    1384.0      300.        41.94
8                    1385.0      309.        56.87
8                    1386.0      318.        72.56
8                    1387.0      327.        89.16
8                    1388.0      333.        106.75
8                    1389.0      342.        125.39
8                    1390.0      350.        145.15
9 ENDTBL
6 RUNOFF 1 001       5 .148      95.         .3
6 RUNOFF 1 002       6 .097      95.         .19
6 REACH  3 003   5   7 1000.     .04         1.66
6 REACH  3 003   6   5 1400.     .04         1.66
6 ADDHYD 4 003   5 7 6
6 RUNOFF 1 003       5 .047      77.         .36
6 ADDHYD 4 003   5 6 7
6 REACH  3 006   7   5 1600.
6 RUNOFF 1 004       6 .170      95.         .22
6 REACH  3 005   6   7 1400.     .05         1.66
6 RUNOFF 1 005       6 .075      77.         .56
6 ADDHYD 4 005   6 7 1
6 REACH  3 006   1   6 800.      .36         1.66
6 ADDHYD 4 006   5 6 7
6 RUNOFF 1 006       6 .109      81.         .82
6 ADDHYD 4 006   6 7 5
6 REACH  3 008   5   6 900.      .17         1.66
6 RUNOFF 1 019       3 .022      95.         .167
6 REACH  3 004   3   4 1200.     .04         1.66
6 RUNOFF 1 004       5 .025      95.         .35
6 ADDHYD 4 003   4 5 3
6 REACH  3 004   3   4 1300.     .07         1.66
6 RUNOFF 1 005       5 .050      77.         .44
6 ADDHYD 4 005   4 5 2
6 RUNOFF 1 018       1 .184      78.         .72
6 REACH  3 005   1   3 1900.     .04         1.66
6 REACH  3 008   2   4 1300.     1.81        1.25
6 ADDHYD 4 008   3 4 5
6 ADDHYD 4 003   5 6 7
6 RUNOFF 1 008       5 .131      78.         .75
6 ADDHYD 4 008   5 7 1
6 RUNOFF 1 010       3 .032      77.         .28
6 REACH  3 144   3   4 1400.     .03         1.66
6 RUNOFF 1 144       5 .039      79.         .44
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
6 ADDHYD 4 144   4 5 6
6 REACH  3 009   6   3 600.        .06         1.66
6 RUNOFF 1 009       4 .035        79.         .53
6 ADDHYD 4 009   3 4 5
6 REACH  3 007   5   6 2000.       .09         1.66
6 RUNOFF 1 007       3 .117        77.         .69
6 ADDHYD 4 007   3 6 4
6 REACH  3 008   4   5 1000.       4.62        1.25
6 RUNOFF 1 009       6 .031        79.         .45
6 REACH  3 008   6   7 1200.       3.30        1.25
6 ADDHYD 4 008   5 7 4
6 ADDHYD 4 008   4 1 6
6 DIVERT 6 014   6 3 4 150.                    8.
6 RESVOR 2    08 4   5 1487.84                                        BASIN #1
6 ADDHYD 4 014   3 5 4
6 REACH  3 014   4   5 3000.       .22         1.48
6 RUNOFF 1 016       6 .119        86.         .54
6 REACH  3 015   6   7 1300.       .54         1.54
6 RUNOFF 1 015       6 .073        82.         .89
6 ADDHYD 4 015   6 7 4
6 ADDHYD 4 014   4 5 7
6 RUNOFF 1 014       5 .177        83.         .39
6 ADDHYD 4 014   5 7 6
6 RUNOFF 1 010       4 .063        77.         .51
6 REACH  3 011   4   5 2640.       .44         1.54
6 RUNOFF 1 011       7 .125        79.         .84
6 ADDHYD 4 011   5 7 4
6 REACH  3 013   4   5 1320.       1.80        1.67
6 RUNOFF 1 013       7 .125        82.         .61
6 ADDHYD 4 013   5 7 4
6 RUNOFF 1 144       5 .093        79.         .44
6 REACH  3 014   5   7 2640.       2.1         1.5
6 ADDHYD 4 013   4 7 5
6 REACH  3 014   5   7 1320.       1.64        1.67
6 ADDHYD 4 014   6 7 5
6 REACH  3 027   5   7 3000.       .11         1.57
6 RUNOFF 1 027       5 .188        82.         1.2
6 ADDHYD 4 027   5 7 6
6 RUNOFF 1 017       5 .059        95.         .17
6 REACH  3 025   5   7 2200.       .05         1.66
6 RUNOFF 1 025       5 .089        83.         .43
6 ADDHYD 4 025   5 7 4
6 REACH  3 027   4   5 1700.       .11         1.57
6 ADDHYD 4 027   5 6 7
6 RUNOFF 1 026       6 .067        85.         .31
6 ADDHYD 4 027   6 7 5
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
6 RUNOFF 1 024       6 .198        86.         .46
6 DIVERT 6 024   6 7 1 53.                     037.
6 REACH  3 026   7   6 1500.       3.78        1.25
6 ADDHYD 4 027   6 5 3
6 RUNOFF 1 028       5 .156        82.         .93
6 DIVERT 6 028   5 7 2 21.                     036.
6 REACH  3 027   7   5 2500.       4.41        1.25
6 ADDHYD 4 027   5 3 7
6 REACH  3 037   7   4 3000.
6 RUNOFF 1 037       5 .125        83.         .25
6 ADDHYD 4 037   4 5 7
6 REACH  3 037   1   6 2100.       .21         1.54
6 ADDHYD 4 037   7 6 5
6 REACH  3 036   2   6 3500.       .06         1.66
6 RUNOFF 1 036       4 .125        83.         .48
6 ADDHYD 4 036   4 6 7
6 RUNOFF 1 034       4 .125        84.         .73
6 REACH  3 035   4   6 1320.       .32         1.54
6 RUNOFF 1 035       4 .125        83.         .49
6 ADDHYD 4 035   4 6 3
6 REACH  3 036   3   4 1320.       4.48        1.25
6 ADDHYD 4 036   4 7 6
6 REACH  3 037   6   7 1320.       4.64        1.25
6 ADDHYD 4 037   5 7 4
6 RUNOFF 1 143       5 .0625       85.         .53
6 ADDHYD 4 143   5 4 7
6 RESVOR 2    43 7   5 1417.0                                          BASIN #3
6 REACH  3 085   5   7 660.        3.21        1.25
6 RUNOFF 1 085       6 .063        84.         .52
6 ADDHYD 4 085   6 7 5
6 REACH  3 084   5   6 1320.       3.21        1.25
6 RUNOFF 1 084       5 .063        84.         .52
6 ADDHYD 4 084   5 6 1
6 RUNOFF 1 091       7 .125        86.         .47
6 REACH  3 090   7   6 1320.       .22         1.54
6 RUNOFF 1 090       5 .109        85.         .63
6 ADDHYD 4 090   5 6 7
6 REACH  3 088   7   6 1320.       .22         1.54
6 RUNOFF 1 088       5 .094        87.         .75
6 ADDHYD 4 088   5 6 7
6 RUNOFF 1 089       5 .047        84.         .39
6 REACH  3 088   5   6 2000.       .22         1.54
6 ADDHYD 4 088   6 7 5
6 REACH  3 101   5   6 1050.       .22         1.54
6 RUNOFF 1 101       5 .047        89.         .52
6 ADDHYD 4 101   5 6 7
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
6 REACH  3 102   7   6 1320.       .02         1.66
6 RUNOFF 1 102       5 .063        82.         .63
6 ADDHYD 4 102   5 6 7
6 REACH  3 104   7   4 1900.       .02         1.66
6 RUNOFF 1 086       5 .063        86.         .27
6 REACH  3 087   5   6 1320.
6 RUNOFF 1 087       5 .063        87.         .52
6 ADDHYD 4 087   5 6 7
6 REACH  3 105   7   6 2000.
6 RUNOFF 1 105       5 .063        78.         .63
6 ADDHYD 4 105   5 6 7
6 REACH  3 104   7   6 1320.       .15         1.54
6 RUNOFF 1 104       5 .069        78.         .67
6 ADDHYD 4 104   5 6 7
6 ADDHYD 4 104   4 7 2
6 DIVERT 6 084   1 5 3             .35         83.
6 REACH  3 105   5   7 1320.       3.07        1.25
6 REACH  3 104   7   4 1320.       1.85        1.25
6 ADDHYD 4 104   4 2 1
6 REACH  3 083   3   5 1320.       8.46        1.25
6 RUNOFF 1 083       6 .063        85.         .52
6 ADDHYD 4 083   5 6 7
6 REACH  3 106   7   6 1320.       5.48        1.25
6 RUNOFF 1 106       5 .063        79.         .56
6 ADDHYD 4 106   5 6 7
6 REACH  3 107   7   6 900.        3.59        1.25
6 RUNOFF 1 107       5 .059        82.         .42
6 ADDHYD 4 107   5 6 2
6 RUNOFF 1 029       5 .125        81.         .73
6 REACH  3 145   5   3 1500.       6.10        1.25
6 RUNOFF 1 012       5 .378        80.         .64
6 REACH  3 145   5   4 2350.       6.09        1.25
6 RUNOFF 1 030       5 .152        79.         .97
6 REACH  3 033   5   6 3500.       .145        1.66
6 RUNOFF 1 033       5 .154        61.         .81
6 ADDHYD 4 033   5 6 7
6 ADDHYD 4 145   4 7 5
6 RUNOFF 1 145       4 .160        81.         .76
6 ADDHYD 4 145   5 4 6
6 DIVERT 6 145   3 4 5 27.                     007.
6 ADDHYD 4 145   5 6 7
6 RESVOR 2    33 7   6 1462.                                        BASIN #4
6 ADDHYD 4 145   6 4 5
6 REACH  3 093   5   6 2640.       3.50        1.25
6 RUNOFF 1 093       5 .195        84.         .45
6 ADDHYD 4 093   5 6 7
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
6 DIVERT 6 093   7 5 4 265.                    92.
6 REACH  3 092   4   6 1320.       .08         1.66
6 RUNOFF 1 092       4 .125        86.         .47
6 ADDHYD 4 092   4 6 7
6 REACH  3 098   7   3 2500.       .08         1.66
6 REACH  3 095   5   4 1320.       4.72        1.25
6 RUNOFF 1 031       5 .084        83.         .58
6 REACH  3 032   5   6 3400.       .03         1.66
6 RUNOFF 1 032       5 .18         80.         .93
6 ADDHYD 4 032   5 6 7
6 REACH  3 094   7   6 3200.       .09         1.66
6 RUNOFF 1 094       7 .139        84.         .34
6 ADDHYD 4 094   6 7 5
6 REACH  3 095   5   6 2400.       .09         1.66
6 RUNOFF 1 095       5 .125        86.         .98
6 ADDHYD 4 095   5 6 7
6 ADDHYD 4 095   4 7 5
6 DIVERT 6 095   5 7 4 265.                    98.
6 REACH  3 098   4   5 3000.       .08         1.66
6 ADDHYD 4 098   3 5 4
6 REACH  3 096   7   6 1320.       4.72        1.25
6 RUNOFF 1 096       5 .125        82.         .51
6 ADDHYD 4 096   5 6 7
6 DIVERT 6 096   7 3 6 265.                    97.
6 REACH  3 097   6   5 2100.       .08         1.66
6 RUNOFF 1 097       6 .188        87.         .53
6 ADDHYD 4 097   5 6 7
6 REACH  3 098   7   5 1000.       .08         1.66
6 ADDHYD 4 098   4 5 7
6 RUNOFF 1 098       5 .094        86.         .37
6 ADDHYD 4 098   5 7 6
6 REACH  3 099   6   7 1250.       .08         1.66
6 RUNOFF 1 099       6 .094        86.         .49
6 ADDHYD 4 099   7 6 5
6 REACH  3 139   5   6 1600.       .05         1.66
6 RUNOFF 1 100       4 .078        86.         .39
6 REACH  3 139   4   5 600.        6.13        1.25
6 ADDHYD 4 139   5 6 7
6 REACH  3 142   3   5 2640.       5.68        1.25
6 RUNOFF 1 142       4 .25         83.         1.39
6 ADDHYD 4 142   4 5 6
6 DIVERT 6 142   6 5 4 265.                    141.
6 REACH  3 141   4   5 2100.       4.34        1.25
6 RUNOFF 1 141       6 .188        87.         .53
6 ADDHYD 4 141   5 6 4
6 REACH  3 140   4   5 1320.       4.21        1.25
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
6 RUNOFF 1 140       6 .125        86.         .44
6 ADDHYD 4 140   5 6 4
6 RUNOFF 1 137       6 .078        80.         .49
6 ADDHYD 4 140   4 6 5
6 REACH  3 139   5   6 2800.       3.78        1.25
6 ADDHYD 4 139   6 7 4
6 RUNOFF 1 136       5 .066        95.         .167
6 REACH  3 138   5   6 3000.       .17         1.66
6 RUNOFF 1 138       5 .203        84.         .24
6 ADDHYD 4 138   5 6 7
6 REACH  3 139   7   6 2000.       4.52        1.25
6 ADDHYD 4 139   4 6 7
6 RUNOFF 1 139       5 .188        87.         .43
6 ADDHYD 4 139   7 5 4
6 RUNOFF 1 129       5 .108        82.         .167
6 RUNOFF 1 130       6 .031        91.         .167
6 ADDHYD 4 129   5 6 7
6 REACH  3 127   7   6 2500.       .08         1.66
6 RUNOFF 1 128       5 .036        80.         .167
6 REACH  3 127   5   7 2300.       .08         1.66
6 ADDHYD 4 127   7 6 5
6 RUNOFF 1 127       7 .159        82.         .21
6 ADDHYD 4 127   5 7 6
6 RUNOFF 1 132       7 .145        89.         .27
6 RUNOFF 1 133       3 .08         95.         .167
6 ADDHYD 4 133   3 7 5
6 REACH  3 131   5   7 2000.       .17         1.66
6 ADDHYD 4 131   6 7 5
6 RUNOFF 1 131       6 .119        86.         .27
6 ADDHYD 4 131   5 6 7
6 REACH  3 126   7   6 1500.       .11         1.66
6 RUNOFF 1 126       5 .158        95.         .28
6 ADDHYD 4 126   5 6 7
6 REACH  3 134   7   6 1500.       .13         1.66
6 RUNOFF 1 135       7 .042        95.         .167
6 REACH  3 134   7   5 3200.       .13         1.66
6 ADDHYD 4 134   5 6 7
6 RUNOFF 1 134       6 .197        85.         .31
6 ADDHYD 4 134   6 7 5
6 RUNOFF 1 125       7 .117        95.         .167
6 ADDHYD 4 125   7 5 6
6 REACH  3 124   6   7 2500.       .09         1.66
6 RUNOFF 1 124       6 .219        84.         .25
6 ADDHYD 4 124   6 7 5
6 REACH  3 124   4   7 900.                                          1
6 ADDHYD 4 124   5 7 6
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
6 RUNOFF 1 103       5 .081        84.         .26
6 ADDHYD 4 124   5 6 7
6 REACH  3 104   7   6 1320.                                        1
6 ADDHYD 4 104   1 6 4
6 REACH  3 107   4   5 1000.                                        1
6 ADDHYD 4 107   5 2 7
6 RUNOFF 1 123       6 .213        95.         .25
6 ADDHYD 4 107   6 7 5
6 REACH  3 108   5   3 1700.
6 RUNOFF 1 108       5 .025        83.         .28
6 ADDHYD 4 108   5 3 1                                              1
6 RUNOFF 1 148       6 .033        82.         0.17
6 REACH  3  47   6   5 1101.       .04         1.66
6 RUNOFF 1  47       6 .073        82.         0.18
6 ADDHYD 4  47   5 6 7
6 REACH  3  46   7   5 1285.       .04         1.66
6 RUNOFF 1  46       6 .053        82.         0.17
6 ADDHYD 4  46   5 6 7
6 REACH  3 149   7   5 1331.       .04         1.66
6 RUNOFF 1 149       6 .009        90.         0.17
6 ADDHYD 4 149   5 6 4
6 RUNOFF 1 147       5 .052        82.         0.17
6 REACH  3 146   5   6 1240.       .04         1.66
6 RUNOFF 1 146       7 .072        82.         0.18
6 ADDHYD 4 146   6 7 5
6 REACH  3  45   5   6  413.       .04         1.66
6 RUNOFF 1  43       5 .047        90.         0.17
6 REACH  3  21   5   7 1377.       .04         1.66
6 ADDHYD 4  21   6 7 5
6 RUNOFF 1  21       6 .189        87.         0.58
6 ADDHYD 4  21   5 6 7
6 REACH  3  45   7   5 3213.       9.02        1.25
6 RUNOFF 1  45       6 .116        90.         0.51
6 ADDHYD 4  45   5 6 7
6 ADDHYD 4  45   4 7 3
6 DIVERT 6 151   3 6 7 267.                    45.
6 REACH  3  59   6   4 1300.       .04         1.66
6 DIVERT 6 151   4 5 6 61.                     43.
6 ADDHYD 4  55   7 6 2
6 RUNOFF 1 150       5 .016        82.         0.17
6 REACH  3  57   5   6 1350.       .04         1.66
6 RUNOFF 1  57       4 .050        82.         0.25
6 ADDHYD 4  57   4 6 5
6 REACH  3  59   5   7 1330.       .04         1.66
6 RUNOFF 1  59       6 .053        82.         0.25
6 ADDHYD 4  59   7 6 4
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
6 DIVERT 6 150   4 5 6 13.                    59.
6 RUNOFF 1  49       5 .086        95.        0.19
6 REACH  3  50   5   4 1928.       .04        1.66
6 RUNOFF 1  50       3 .092        95.        0.483
6 ADDHYD 4  50   4 3 7
6 RUNOFF 1  20       5 .064        95.        0.17
6 REACH  3  48   5   3 2570.       .04        1.66
6 RUNOFF 1  48       4 .092        82.        0.6
6 ADDHYD 4  48   3 4 5
6 REACH  3  50   5   4 1836.       .04        1.66
6 ADDHYD 4  50   7 4 3
6 REACH  3  52   3   4 550.        .04        1.66
6 RUNOFF 1  52       3 .055        82.        0.190
6 ADDHYD 4  52   4 3 5
6 REACH  3  56   5   3 1377.       .04        1.66
6 RUNOFF 1  56       4 .067        82.        0.25
6 ADDHYD 4  56   3 4 5
6 REACH  3  51   5   3 1377.       .04        1.66
6 RUNOFF 1  51       4 .031        82.        0.17
6 ADDHYD 4  51   3 4 5
6 REACH  3  55   5   3 1331.       .04        1.66
6 RUNOFF 1  55       4 .017        82.        0.17
6 ADDHYD 4  55   3 4 5
6 DIVERT 6 151   5 4 7 67.                    37.
6 ADDHYD 4  55   6 7 4
6 ADDHYD 4  55   2 4 6
6 RESVOR 2    59 6   7                                          BASIN #2
6 REACH  3 066   7   6 660.        5.64       1.25
6 RUNOFF 1 066       5 .063        84.        .46
6 ADDHYD 4 066   5 6 7
6 REACH  3 067   7   6 1320.       7.18       1.25
6 RUNOFF 1 067       5 .063        88.        .25
6 ADDHYD 4 067   5 6 7
6 RUNOFF 1 044       5 .125        87.        .3
6 REACH  3 067   5   6 1320.       .25        1.54
6 ADDHYD 4 067   6 7 4
6 REACH  3 069   4   6 1320.       3.06       1.25
6 RUNOFF 1 069       5 .063        81.        .62
6 ADDHYD 4 069   5 6 4
6 RUNOFF 1 023       6 .091        95.        .23
6 REACH  3 040   6   5 2650.       .08        1.66
6 RUNOFF 1 038       7 .125        85.        .44
6 REACH  3 040   7   6 1800.       .08        1.66
6 ADDHYD 4 040   5 6 7
6 RUNOFF 1 040       5 .094        82.        .51
6 ADDHYD 4 040   5 7 6
```

```
**********************80-80 LIST OF INPUT DATA (CONTINUED)**********************

 6 REACH  3 082   6   5 1400.       .1          1.66
 6 RUNOFF 1 082       6 .063        84.         .27
 6 ADDHYD 4 082   5 6 7
 6 RUNOFF 1 039       5 .0625       85.         .53
 6 REACH  3 082   5   6 1867.       .1          1.66
 6 ADDHYD 4 082   6 7 5
 6 REACH  3 081   5   6 1320.       .22         1.54
 6 RUNOFF 1 081       5 .063        84.         .52
 6 ADDHYD 4 081   5 6 3
 6 RUNOFF 1 022       5 .153        87.         .47
 6 REACH  3 041   5   6 3100.       .24         1.66
 6 RUNOFF 1 041       5 .172        84.         .38
 6 ADDHYD 4 041   5 6 7
 6 RUNOFF 1 042       5 .078        87.         .22
 6 ADDHYD 4 042   5 7 6
 6 REACH  3 078   6   5 1600.       .09         1.66
 6 DIVERT 6 081   3 7 6 154.                    78.
 6 REACH  3 078   6   3 1320.       .09         1.66
 6 ADDHYD 4 078   5 3 6
 6 RUNOFF 1 078       3 .063        86.         .27
 6 ADDHYD 4 078   6 3 5
 6 SAVMOV 5 081   7   3
 6 REACH  3 077   5   6 1320.       .23         1.54
 6 RUNOFF 1 077       5 .063        86.         .38
 6 ADDHYD 4 077   5 6 7
 6 ADDHYD 4 069   4 7 2
 6 RESVOR 2    69 2   6 1372.0                                          BASIN #5
 6 REACH  3 075   6   4 1320.       3.79        1.25                 1
 6 REACH  3 080   3   6 1320.       7.06        1.25
 6 RUNOFF 1 080       5 .063        82.         .45
 6 ADDHYD 4 080   6 5 2
 6 DIVERT 6 080   2 3 5 166.                    79.
 6 REACH  3 079   5   6 1320.       .23         1.54
 6 RUNOFF 1 079       5 .063        88.         .25
 6 ADDHYD 4 079   5 6 7
 6 REACH  3 076   7   6 1320.       .23         1.54
 6 RUNOFF 1 076       5 .063        86.         .25
 6 ADDHYD 4 076   5 6 7
 6 REACH  3 075   7   6 1320.       .23         1.54
 6 ADDHYD 4 075   4 6 5
 6 RUNOFF 1 075       6 .063        95.         .52
 6 ADDHYD 4 075   5 6 7
 6 REACH  3 112   7   4 1320.       3.79        1.25                 1
 6 REACH  3 109   3   7 2640.       4.04        1.25
 6 RUNOFF 1 109       5 .063        84.         .29
 6 ADDHYD 4 109   5 7 6
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
6 ADDHYD 4 108   1 6 7
6 REACH  3 110   7   6 1320.
6 RUNOFF 1 110       5 .073        78.         .56
6 ADDHYD 4 110   5 6 7
6 RUNOFF 1 122       6 .355        85.         .29
6 ADDHYD 4 110   6 7 5                                          1
6 REACH  3 111   5   6 1320.
6 RUNOFF 1 111       5 .07         77.         .56
6 ADDHYD 4 111   5 6 7                                          1
6 REACH  3 112   7   6 1320.       .06         1.63
6 RUNOFF 1 112       5 .061        77.         .46
6 ADDHYD 4 112   5 6 7
6 RUNOFF 1 121       5 .25         95.         .17
6 ADDHYD 4 112   5 7 1                                          1
6 ADDHYD 4 112   1 4 3
6 REACH  3 113   3   5 1320.       .06         1.63
6 RUNOFF 1 113       6 .053        91.         .52
6 ADDHYD 4 113   5 6 7
6 RUNOFF 1 120       5 .231        87.         .30
6 ADDHYD 4 113   5 7 1                                          1
6 RUNOFF 1 058       5 .032        84.         .17
6 REACH  3 060   5   6 1320.       .25         1.54
6 RUNOFF 1 060       5 .063        81.         .49
6 ADDHYD 4 060   5 6 7
6 REACH  3 065   7   6 1320.       .28         1.54
6 RUNOFF 1 065       5 .063        82.         .49
6 ADDHYD 4 065   5 6 7
6 REACH  3 068   7   6 1320.       .25         1.54
6 RUNOFF 1 068       5 .063        85.         .25
6 ADDHYD 4 068   5 6 7
6 REACH  3 070   7   6 1320.       .18         1.54
6 RUNOFF 1 070       5 .063        86.         .25
6 ADDHYD 4 070   5 6 7
6 REACH  3 074   7   6 1320.       .09         1.66
6 RUNOFF 1 074       5 .063        90.         .24
6 ADDHYD 4 074   5 6 7
6 REACH  3 113   7   6 1320.       6.62        1.25
6 ADDHYD 4 113   1 6 3
6 REACH  3 114   3   1 3000.       .05         1.64
6 RUNOFF 1 064       5 .25         82.         .33
6 REACH  3 072   5   6 2650.       .18         1.54
6 RUNOFF 1 072       5 .125        83.         .49
6 ADDHYD 4 072   5 6 7
6 REACH  3 114   7   6 2000.       .05         1.66
6 RUNOFF 1 115       5 .094        82.         .45
6 ADDHYD 4 114   5 6 7
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**********************80-80 LIST OF INPUT DATA (CONTINUED)**********************

 6 RUNOFF 1 071       5 .125        83.         .49
 6 REACH  3 114   5   6 2200.       .05         1.66
 6 ADDHYD 4 114   6 7 5
 6 RUNOFF 1 114       6 .128        85.         1.19
 6 ADDHYD 4 114   5 6 7
 6 ADDHYD 4 114   1 7 5
 6 RUNOFF 1 119       6 .231        84.         1.05
 6 ADDHYD 4 114   5 6 7                                          1
 6 REACH  3 118   7   6 4000.       .05         1.66
 6 RUNOFF 1 118       5 .231        81.         1.59
 6 ADDHYD 4 118   5 6 7
 6 REACH  3 117   7   6 3527.       .05         1.66
 6 RUNOFF 1 117       5 .173        80.         1.9
 6 ADDHYD 4 117   5 6 7
   ENDATA
 7 INCREM 6             .08
 7 COMPUT 7 001   112               4.04        24.         1 2  01  01
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST*********************************


EXECUTIVE CONTROL OPERATION INCREM     MAIN TIME INCREMENT =   .08 HOURS                                    RECORD ID


EXECUTIVE CONTROL OPERATION COMPUT     FROM XSECTION   1  TO XSECTION 112                                   RECORD ID
        STARTING TIME =   .00    RAIN DEPTH =  4.04    RAIN DURATION= 24.00    RAIN TABLE NO.= 1    ANT. MOIST. COND= 2
        ALTERNATE NO.= 1         STORM NO.= 1    MAIN TIME INCREMENT =   .08 HOURS

    ***  WARNING  REACH   6 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH   8 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH   8 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH   8 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH   8 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH  15 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH  13 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH  14 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH  14 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH  26 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    *** WARNING - REACH  27 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT       2.98 CFS,  14.20 % OF PEAK.

    ***  WARNING  REACH  36 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH  37 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    ***  WARNING  REACH  85 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    *** WARNING - REACH  85 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT     278.60 CFS,  53.91 % OF PEAK.

    ***  WARNING  REACH  84 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    *** WARNING - REACH  84 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT     279.95 CFS,  53.77 % OF PEAK.
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***  WARNING  REACH 101 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

***  WARNING  REACH 105 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING - REACH 105 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT     100.03 CFS,  53.63 % OF PEAK.
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*** WARNING REACH 104 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING - REACH 104 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT     101.28 CFS,  54.30 % OF PEAK.
*** WARNING REACH  83 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING - REACH  83 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT     181.27 CFS,  53.62 % OF PEAK.
*** WARNING REACH 106 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING - REACH 106 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT     182.64 CFS,  45.33 % OF PEAK.
*** WARNING REACH 107 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING - REACH 107 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT     183.87 CFS,  39.28 % OF PEAK.
*** WARNING REACH 145 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING REACH 145 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING - REACH  93 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT      61.53 CFS,  51.48 % OF PEAK.
*** WARNING REACH  95 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING - REACH  95 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT      67.24 CFS,  25.37 % OF PEAK.
*** WARNING REACH  96 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING - REACH  96 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT      77.67 CFS,  29.31 % OF PEAK.
*** WARNING REACH  98 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING REACH  99 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING REACH 139 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING REACH 142 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING - REACH 142 INFLOW HYDROGRAPH VOLUME TRUNCATED ABOVE BASEFLOW AT      80.28 CFS,  30.29 % OF PEAK.
*** WARNING REACH 141 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING REACH 140 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING REACH 139 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
*** WARNING REACH 139 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT ***
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*** WARNING  REACH 126 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH 134 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH 124 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH 104 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH 107 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH 108 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH  45 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH  45 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH  52 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    *** WARNING - STRUCTURE 59 DELTA T IS TOO LARGE.  O /2 >  S /DELTA T OCCURED 45 TIMES STARTING WITH POINT210

*** WARNING  REACH  66 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH  67 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH  69 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH  81 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH  77 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

    *** WARNING - STRUCTURE 69 DELTA T IS TOO LARGE.  O /2 >  S /DELTA T OCCURED 54 TIMES STARTING WITH POINT  2

*** WARNING  REACH  75 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH  80 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

*** WARNING  REACH 112 ATT-KIN COEFF.(C) GREATER THAN 0.667, CONSIDER REDUCING MAIN TIME INCREMENT  ***

EXECUTIVE CONTROL OPERATION ENDCMP     COMPUTATIONS COMPLETED FOR PASS   1                    RECORD ID


EXECUTIVE CONTROL OPERATION ENDJOB                                                              RECORD ID
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SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
(A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 1	RUNOFF	.15	1	2	.08	.0	4.04	24.00	3.46	---	12.45	248.49	1679.0
XSECTION 2	RUNOFF	.10	1	2	.08	.0	4.04	24.00	3.46	---	12.44	165.73	1708.6
XSECTION 3	REACH	.15	1	2	.08	.0	4.04	24.00	3.45	---	12.63	244.59	1652.7
XSECTION 3	REACH	.10	1	2	.08	.0	4.04	24.00	3.44	---	12.70	158.51	1634.1
XSECTION 3	ADDHYD	.25	1	2	.08	.0	4.04	24.00	3.45	---	12.65	400.78	1635.9
XSECTION 3	RUNOFF	.05	1	2	.08	.0	4.04	24.00	1.83	---	12.52	51.36	1092.7
XSECTION 3	ADDHYD	.29	1	2	.08	.0	4.04	24.00	3.19	---	12.59	446.92	1530.5
XSECTION 6	REACH	.29	1	2	.08	.0	4.04	24.00	3.18	1505.54	12.71	443.03	1517.2
XSECTION 4	RUNOFF	.17	1	2	.08	.0	4.04	24.00	3.46	---	12.44	288.39	1696.4
XSECTION 5	REACH	.17	1	2	.08	.0	4.04	24.00	3.45	---	12.61	282.58	1662.3
XSECTION 5	RUNOFF	.08	1	2	.08	.0	4.04	24.00	1.83	---	12.59	73.59	981.2
XSECTION 5	ADDHYD	.25	1	2	.08	.0	4.04	24.00	2.95	---	12.60	356.20	1453.9
XSECTION 6	REACH	.25	1	2	.08	.0	4.04	24.00	2.95	1505.35	12.60	356.20	1453.9
XSECTION 6	ADDHYD	.54	1	2	.08	.0	4.04	24.00	3.08	1506.27	12.63	793.73	1478.1
XSECTION 6	RUNOFF	.11	1	2	.08	.0	4.04	24.00	2.13	---	12.71	106.85	980.3
XSECTION 6	ADDHYD	.65	1	2	.08	.0	4.04	24.00	2.92	1506.36	12.64	899.04	1391.7
XSECTION 8	REACH	.65	1	2	.08	.0	4.04	24.00	2.92	1497.32	12.64	899.04	1391.7
XSECTION 19	RUNOFF	.02	1	2	.08	.0	4.04	24.00	3.47	---	12.44	37.85	1720.5
XSECTION 4	REACH	.02	1	2	.08	.0	4.04	24.00	3.44	---	12.79	33.95	1543.1
XSECTION 4	RUNOFF	.03	1	2	.08	.0	4.04	24.00	3.46	---	12.45	41.60	1664.1
XSECTION 3	ADDHYD	.05	1	2	.08	.0	4.04	24.00	3.45	---	12.52	71.03	1511.2
XSECTION 4	REACH	.05	1	2	.08	.0	4.04	24.00	3.43	---	12.75	66.46	1414.1
XSECTION 5	RUNOFF	.05	1	2	.08	.0	4.04	24.00	1.83	---	12.54	52.66	1053.1
XSECTION 5	ADDHYD	.10	1	2	.08	.0	4.04	24.00	2.61	---	12.60	113.73	1172.4
XSECTION 18	RUNOFF	.18	1	2	.08	.0	4.04	24.00	1.90	---	12.67	171.98	934.7
XSECTION 5	REACH	.18	1	2	.08	.0	4.04	24.00	1.89	---	12.98	146.42	795.7
XSECTION 8	REACH	.10	1	2	.08	.0	4.04	24.00	2.60	1495.46	12.70	112.51	1159.9
XSECTION 8	ADDHYD	.28	1	2	.08	.0	4.04	24.00	2.13	1496.56	12.85	242.68	863.6
XSECTION 3	ADDHYD	.93	1	2	.08	.0	4.04	24.00	2.68	---	12.68	1124.09	1212.6
XSECTION 8	RUNOFF	.13	1	2	.08	.0	4.04	24.00	1.90	---	12.68	119.20	909.9
XSECTION 8	ADDHYD	1.06	1	2	.08	.0	4.04	24.00	2.58	1497.54	12.68	1243.37	1175.2
XSECTION 10	RUNOFF	.03	1	2	.08	.0	4.04	24.00	1.83	---	12.48	36.18	1130.5

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
(A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 144	REACH	.03	1	2	.08	.0	4.04	24.00	1.81	---	12.93	25.80	806.1
XSECTION 144	RUNOFF	.04	1	2	.08	.0	4.04	24.00	1.98	---	12.54	43.85	1124.3
XSECTION 144	ADDHYD	.07	1	2	.08	.0	4.04	24.00	1.90	---	12.59	60.38	850.4
XSECTION 9	REACH	.07	1	2	.08	.0	4.04	24.00	1.90	---	12.72	58.20	819.6
XSECTION 9	RUNOFF	.04	1	2	.08	.0	4.04	24.00	1.98	---	12.57	37.36	1067.4
XSECTION 9	ADDHYD	.11	1	2	.08	.0	4.04	24.00	1.93	---	12.65	93.10	878.3
XSECTION 7	REACH	.11	1	2	.08	.0	4.04	24.00	1.92	---	12.86	82.08	774.4
XSECTION 7	RUNOFF	.12	1	2	.08	.0	4.04	24.00	1.83	---	12.65	106.65	911.5
XSECTION 7	ADDHYD	.22	1	2	.08	.0	4.04	24.00	1.87	---	12.73	182.02	816.2
XSECTION 8	REACH	.22	1	2	.08	.0	4.04	24.00	1.87	1496.42	12.73	182.02	816.2
XSECTION 9	RUNOFF	.03	1	2	.08	.0	4.04	24.00	1.98	---	12.54	34.71	1119.7
XSECTION 8	REACH	.03	1	2	.08	.0	4.04	24.00	1.98	1494.73	12.62	34.55	1114.6
XSECTION 8	ADDHYD	.25	1	2	.08	.0	4.04	24.00	1.88	1496.49	12.70	215.04	846.6
XSECTION 8	ADDHYD	1.31	1	2	.08	.0	4.04	24.00	2.45	1497.65	12.68	1458.14	1111.4
XSECTION 14	DIVERT	.00	1	2	.08	.0	4.04	24.00	2.45	---	11.84*	150.00	**********
XSECTION 8	DIVERT	1.31	1	2	.08	.0	4.04	24.00	1.53	1497.58	12.68	1308.14	997.1
STRUCTURE 8	RESVOR	1.31	1	2	.08	.0	4.04	24.00	1.50	1496.48	13.41	252.52	192.5
XSECTION 14	ADDHYD	1.31	1	2	.08	.0	4.04	24.00	2.42	---	13.41	402.52	306.8
XSECTION 14	REACH	1.31	1	2	.08	.0	4.04	24.00	2.41	---	13.76	398.74	303.9
XSECTION 16	RUNOFF	.12	1	2	.08	.0	4.04	24.00	2.56	---	12.54	155.97	1310.7
XSECTION 15	REACH	.12	1	2	.08	.0	4.04	24.00	2.56	---	12.64	155.01	1302.6
XSECTION 15	RUNOFF	.07	1	2	.08	.0	4.04	24.00	2.21	---	12.74	71.32	977.0
XSECTION 15	ADDHYD	.19	1	2	.08	.0	4.04	24.00	2.43	---	12.66	224.76	1170.6
XSECTION 14	ADDHYD	1.50	1	2	.08	.0	4.04	24.00	2.41	---	12.79	514.18	341.9
XSECTION 14	RUNOFF	.18	1	2	.08	.0	4.04	24.00	2.31	---	12.51	227.94	1287.8
XSECTION 14	ADDHYD	1.68	1	2	.08	.0	4.04	24.00	2.40	---	12.61	695.38	413.7
XSECTION 10	RUNOFF	.06	1	2	.08	.0	4.04	24.00	1.83	---	12.57	63.50	1007.9
XSECTION 11	REACH	.06	1	2	.08	.0	4.04	24.00	1.82	---	12.73	57.88	918.7
XSECTION 11	RUNOFF	.13	1	2	.08	.0	4.04	24.00	1.97	---	12.72	113.30	906.4
XSECTION 11	ADDHYD	.19	1	2	.08	.0	4.04	24.00	1.92	---	12.73	171.16	910.4
XSECTION 13	REACH	.19	1	2	.08	.0	4.04	24.00	1.92	---	12.73	171.16	910.4
XSECTION 13	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.22	---	12.59	140.57	1124.5
XSECTION 13	ADDHYD	.31	1	2	.08	.0	4.04	24.00	2.04	---	12.66	305.84	977.1
XSECTION 144	RUNOFF	.09	1	2	.08	.0	4.04	24.00	1.98	---	12.54	104.56	1124.3
XSECTION 14	REACH	.09	1	2	.08	.0	4.04	24.00	1.98	---	12.63	103.43	1112.1
XSECTION 13	ADDHYD	.41	1	2	.08	.0	4.04	24.00	2.03	---	12.65	408.94	1007.2

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
(A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 14	REACH	.41	1	2	.08	.0	4.04	24.00	2.03	---	12.65	408.94	1007.2
XSECTION 14	ADDHYD	2.09	1	2	.08	.0	4.04	24.00	2.33	---	12.63	1103.09	528.6
XSECTION 27	REACH	2.09	1	2	.08	.0	4.04	24.00	2.32	---	12.80	1033.79	495.3
XSECTION 27	RUNOFF	.19	1	2	.08	.0	4.04	24.00	2.20	---	12.91	157.15	835.9
XSECTION 27	ADDHYD	2.28	1	2	.08	.0	4.04	24.00	2.31	---	12.82	1186.91	521.7
XSECTION 17	RUNOFF	.06	1	2	.08	.0	4.04	24.00	3.47	---	12.44	101.41	1718.8
XSECTION 25	REACH	.06	1	2	.08	.0	4.04	24.00	3.43	---	12.88	89.43	1515.7
XSECTION 25	RUNOFF	.09	1	2	.08	.0	4.04	24.00	2.31	---	12.52	113.22	1272.2
XSECTION 25	ADDHYD	.15	1	2	.08	.0	4.04	24.00	2.76	---	12.56	188.52	1273.8
XSECTION 27	REACH	.15	1	2	.08	.0	4.04	24.00	2.75	---	12.74	173.99	1175.6
XSECTION 27	ADDHYD	2.42	1	2	.08	.0	4.04	24.00	2.34	---	12.80	1358.14	560.5
XSECTION 26	RUNOFF	.07	1	2	.08	.0	4.04	24.00	2.48	---	12.47	93.38	1393.7
XSECTION 27	ADDHYD	2.49	1	2	.08	.0	4.04	24.00	2.34	---	12.78	1389.21	557.9
XSECTION 24	RUNOFF	.20	1	2	.08	.0	4.04	24.00	2.57	---	12.52	268.81	1357.6
XSECTION 24	DIVERT	.00	1	2	.08	.0	4.04	24.00	2.57	---	11.76*	53.00	**********
XSECTION 37	DIVERT	.20	1	2	.08	.0	4.04	24.00	1.33	1453.42	12.52	215.81	1090.0
XSECTION 26	REACH	.00	1	2	.08	.0	4.04	24.00	1.33	---	12.16*	53.00	**********
XSECTION 27	ADDHYD	2.49	1	2	.08	.0	4.04	24.00	2.44	---	12.78	1442.21	579.2
XSECTION 28	RUNOFF	.16	1	2	.08	.0	4.04	24.00	2.21	---	12.76	149.43	957.9
XSECTION 28	DIVERT	.00	1	2	.08	.0	4.04	24.00	2.21	---	11.92*	21.00	**********
XSECTION 36	DIVERT	.16	1	2	.08	.0	4.04	24.00	1.28	---	12.76	128.43	823.3
XSECTION 27	REACH	.00	1	2	.08	.0	4.04	24.00	1.28	---	12.80*	21.00	**********
XSECTION 27	ADDHYD	2.49	1	2	.08	.0	4.04	24.00	2.50	---	12.78	1463.21	587.6
XSECTION 37	REACH	2.49	1	2	.08	.0	4.04	24.00	2.49	1455.90	12.90	1448.20	581.6
XSECTION 37	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.31	---	12.46	169.10	1352.8
XSECTION 37	ADDHYD	2.62	1	2	.08	.0	4.04	24.00	2.49	1455.93	12.88	1472.74	563.2
XSECTION 37	REACH	.20	1	2	.08	.0	4.04	24.00	1.33	1453.37	12.74	201.99	1020.2
XSECTION 37	ADDHYD	2.81	1	2	.08	.0	4.04	24.00	2.40	1456.12	12.84	1660.13	590.2
XSECTION 36	REACH	.16	1	2	.08	.0	4.04	24.00	1.28	---	13.27	95.47	612.0
XSECTION 36	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.30	---	12.54	155.70	1245.6
XSECTION 36	ADDHYD	.28	1	2	.08	.0	4.04	24.00	1.74	---	12.61	184.22	655.6
XSECTION 34	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.38	---	12.64	141.66	1133.3
XSECTION 35	REACH	.13	1	2	.08	.0	4.04	24.00	2.38	---	12.76	139.42	1115.3
XSECTION 35	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.30	---	12.54	154.91	1239.3
XSECTION 35	ADDHYD	.25	1	2	.08	.0	4.04	24.00	2.34	---	12.61	281.75	1127.0
XSECTION 36	REACH	.25	1	2	.08	.0	4.04	24.00	2.34	---	12.61	281.75	1127.0

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
(A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 36	ADDHYD	.53	1	2	.08	.0	4.04	24.00	2.02	---	12.61	465.96	877.5
XSECTION 37	REACH	.53	1	2	.08	.0	4.04	24.00	2.02	1454.42	12.61	465.96	877.5
XSECTION 37	ADDHYD	3.34	1	2	.08	.0	4.04	24.00	2.34	1456.52	12.75	2060.54	616.2
XSECTION 143	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.48	---	12.55	80.11	1281.8
XSECTION 143	ADDHYD	3.41	1	2	.08	.0	4.04	24.00	2.35	---	12.73	2127.37	624.5
STRUCTURE 43	RESVOR	3.41	1	2	.08	.0	4.04	24.00	2.27	1434.72	14.74	516.79	151.7
XSECTION 85	REACH	3.41	1	2	.08	.0	4.04	24.00	2.27	---	14.74	516.79	151.7
XSECTION 85	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.39	---	12.55	79.29	1258.6
XSECTION 85	ADDHYD	3.47	1	2	.08	.0	4.04	24.00	2.27	---	14.73	520.68	150.1
XSECTION 84	REACH	3.47	1	2	.08	.0	4.04	24.00	2.27	4.67	14.73	520.68	150.1
XSECTION 84	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.39	---	12.55	79.29	1258.6
XSECTION 84	ADDHYD	3.53	1	2	.08	.0	4.04	24.00	2.27	4.69	14.72	524.58	148.5
XSECTION 91	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.57	---	12.52	169.21	1353.7
XSECTION 90	REACH	.13	1	2	.08	.0	4.04	24.00	2.56	---	12.64	165.02	1320.2
XSECTION 90	RUNOFF	.11	1	2	.08	.0	4.04	24.00	2.47	---	12.58	132.92	1219.5
XSECTION 90	ADDHYD	.23	1	2	.08	.0	4.04	24.00	2.52	---	12.61	297.37	1270.8
XSECTION 88	REACH	.23	1	2	.08	.0	4.04	24.00	2.51	---	12.73	292.64	1250.6
XSECTION 88	RUNOFF	.09	1	2	.08	.0	4.04	24.00	2.65	---	12.64	115.03	1223.7
XSECTION 88	ADDHYD	.33	1	2	.08	.0	4.04	24.00	2.55	---	12.70	405.68	1236.8
XSECTION 89	RUNOFF	.05	1	2	.08	.0	4.04	24.00	2.39	---	12.50	62.16	1322.6
XSECTION 88	REACH	.05	1	2	.08	.0	4.04	24.00	2.38	---	12.75	56.34	1198.7
XSECTION 88	ADDHYD	.38	1	2	.08	.0	4.04	24.00	2.53	---	12.71	461.63	1231.0
XSECTION 101	REACH	.38	1	2	.08	.0	4.04	24.00	2.53	---	12.80	459.15	1224.4
XSECTION 101	RUNOFF	.05	1	2	.08	.0	4.04	24.00	2.84	---	12.53	67.37	1433.4
XSECTION 101	ADDHYD	.42	1	2	.08	.0	4.04	24.00	2.56	---	12.76	507.15	1201.8
XSECTION 102	REACH	.42	1	2	.08	.0	4.04	24.00	2.56	---	12.95	473.91	1123.0
XSECTION 102	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.22	---	12.60	70.08	1112.4
XSECTION 102	ADDHYD	.48	1	2	.08	.0	4.04	24.00	2.51	---	12.90	517.63	1067.3
XSECTION 104	REACH	.48	1	2	.08	.0	4.04	24.00	2.50	1.84	13.17	462.88	954.4
XSECTION 86	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.57	---	12.46	90.81	1441.4
XSECTION 87	REACH	.06	1	2	.08	.0	4.04	24.00	2.56	1429.96	12.70	80.99	1285.6
XSECTION 87	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.65	---	12.54	85.98	1364.8
XSECTION 87	ADDHYD	.13	1	2	.08	.0	4.04	24.00	2.61	1430.03	12.60	162.32	1288.3
XSECTION 105	REACH	.13	1	2	.08	.0	4.04	24.00	2.59	1417.63	12.98	140.33	1113.8
XSECTION 105	RUNOFF	.06	1	2	.08	.0	4.04	24.00	1.90	---	12.61	61.30	973.0
XSECTION 105	ADDHYD	.19	1	2	.08	.0	4.04	24.00	2.36	1417.70	12.84	180.83	956.8

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
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A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 104	REACH	.19	1	2	.08	.0	4.04	24.00	2.35	1.03	13.01	175.85	930.4
XSECTION 104	RUNOFF	.07	1	2	.08	.0	4.04	24.00	1.90	---	12.64	65.89	954.9
XSECTION 104	ADDHYD	.26	1	2	.08	.0	4.04	24.00	2.23	1.17	12.86	221.88	860.0
XSECTION 104	ADDHYD	.74	1	2	.08	.0	4.04	24.00	2.41	2.28	13.09	661.69	890.6
XSECTION 84	DIVERT	1.24	1	2	.08	.0	4.04	24.00	2.31	2.16	14.72	186.51	150.9
XSECTION 83	DIVERT	2.30	1	2	.08	.0	4.04	24.00	2.25	2.16	14.72	338.07	147.2
XSECTION 105	REACH	1.24	1	2	.08	.0	4.04	24.00	2.30	1417.70	14.80	186.51	150.9
XSECTION 104	REACH	1.24	1	2	.08	.0	4.04	24.00	2.29	1.06	14.90	186.49	150.8
XSECTION 104	ADDHYD	1.98	1	2	.08	.0	4.04	24.00	2.33	2.62	13.07	832.82	420.7
XSECTION 83	REACH	2.30	1	2	.08	.0	4.04	24.00	2.25	2.16	14.72	338.07	147.2
XSECTION 83	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.48	---	12.54	81.54	1294.3
XSECTION 83	ADDHYD	2.36	1	2	.08	.0	4.04	24.00	2.26	2.43	12.63	402.98	170.8
XSECTION 106	REACH	2.36	1	2	.08	.0	4.04	24.00	2.26	---	12.63	402.98	170.8
XSECTION 106	RUNOFF	.06	1	2	.08	.0	4.04	24.00	1.98	---	12.58	66.28	1052.0
XSECTION 106	ADDHYD	2.42	1	2	.08	.0	4.04	24.00	2.25	---	12.62	468.76	193.5
XSECTION 107	REACH	2.42	1	2	.08	.0	4.04	24.00	2.25	2.01	12.62	468.76	193.5
XSECTION 107	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.22	---	12.52	73.26	1241.7
XSECTION 107	ADDHYD	2.48	1	2	.08	.0	4.04	24.00	2.25	2.18	12.59	537.03	216.4
XSECTION 29	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.13	---	12.66	128.47	1027.8
XSECTION 145	REACH	.13	1	2	.08	.0	4.04	24.00	2.13	---	12.66	128.47	1027.8
XSECTION 12	RUNOFF	.38	1	2	.08	.0	4.04	24.00	2.06	---	12.61	394.33	1043.2
XSECTION 145	REACH	.38	1	2	.08	.0	4.04	24.00	2.06	---	12.61	394.33	1043.2
XSECTION 30	RUNOFF	.15	1	2	.08	.0	4.04	24.00	1.97	---	12.80	127.06	835.9
XSECTION 33	REACH	.15	1	2	.08	.0	4.04	24.00	1.96	---	13.14	111.86	735.9
XSECTION 33	RUNOFF	.15	1	2	.08	.0	4.04	24.00	.82	---	12.79	58.69	381.1
XSECTION 33	ADDHYD	.31	1	2	.08	.0	4.04	24.00	1.39	---	12.99	156.44	511.3
XSECTION 145	ADDHYD	.68	1	2	.08	.0	4.04	24.00	1.76	---	12.67	512.36	749.1
XSECTION 145	RUNOFF	.16	1	2	.08	.0	4.04	24.00	2.13	---	12.67	161.24	1007.8
XSECTION 145	ADDHYD	.84	1	2	.08	.0	4.04	24.00	1.83	---	12.67	673.60	798.1
XSECTION 145	DIVERT	.00	1	2	.08	.0	4.04	24.00	1.83	---	11.92*	27.00	**********
XSECTION 7	DIVERT	.13	1	2	.08	.0	4.04	24.00	1.04	---	12.66	101.47	811.8
XSECTION 145	ADDHYD	.97	1	2	.08	.0	4.04	24.00	1.73	---	12.67	774.98	799.8
STRUCTURE 33	RESVOR	.97	1	2	.08	.0	4.04	24.00	1.60	1469.07	14.04	93.45	96.4
XSECTION 145	ADDHYD	.97	1	2	.08	.0	4.04	24.00	1.74	---	13.42	119.61	123.4
XSECTION 93	REACH	.97	1	2	.08	.0	4.04	24.00	1.73	---	13.51	119.33	123.1
XSECTION 93	RUNOFF	.19	1	2	.08	.0	4.04	24.00	2.39	---	12.52	253.10	1297.9

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SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 93	ADDHYD	1.16	1	2	.08	.0	4.04	24.00	1.84	---	12.54	355.09	305.1
XSECTION 93	DIVERT	.00	1	2	.08	.0	4.04	24.00	1.84	---	12.24*	265.00	**********
XSECTION 92	DIVERT	1.16	1	2	.08	.0	4.04	24.00	.05	---	12.54	90.09	77.4
XSECTION 92	REACH	1.16	1	2	.08	.0	4.04	24.00	.05	---	12.69	72.95	62.7
XSECTION 92	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.57	---	12.52	169.21	1353.7
XSECTION 92	ADDHYD	1.29	1	2	.08	.0	4.04	24.00	.29	---	12.60	229.82	178.3
XSECTION 98	REACH	1.29	1	2	.08	.0	4.04	24.00	.29	---	12.86	200.37	155.4
XSECTION 95	REACH	.00	1	2	.08	.0	4.04	24.00	.29	---	12.24*	265.00	**********
XSECTION 31	RUNOFF	.08	1	2	.08	.0	4.04	24.00	2.30	---	12.57	99.02	1178.8
XSECTION 32	REACH	.08	1	2	.08	.0	4.04	24.00	2.26	---	13.34	60.30	717.9
XSECTION 32	RUNOFF	.18	1	2	.08	.0	4.04	24.00	2.05	---	12.77	160.51	891.7
XSECTION 32	ADDHYD	.26	1	2	.08	.0	4.04	24.00	2.12	---	12.85	193.67	733.6
XSECTION 94	REACH	.26	1	2	.08	.0	4.04	24.00	2.11	---	13.23	172.54	653.6
XSECTION 94	RUNOFF	.14	1	2	.08	.0	4.04	24.00	2.39	---	12.49	186.62	1342.6
XSECTION 94	ADDHYD	.40	1	2	.08	.0	4.04	24.00	2.21	---	12.56	256.69	637.0
XSECTION 95	REACH	.40	1	2	.08	.0	4.04	24.00	2.20	---	12.72	232.30	576.4
XSECTION 95	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.55	---	12.77	132.85	1062.8
XSECTION 95	ADDHYD	.53	1	2	.08	.0	4.04	24.00	2.28	---	12.73	364.57	690.5
XSECTION 95	ADDHYD	.53	1	2	.08	.0	4.04	24.00	6.23	---	12.72	629.37	1192.0
XSECTION 95	DIVERT	.00	1	2	.08	.0	4.04	24.00	6.23	---	12.00*	265.00	**********
XSECTION 98	DIVERT	.53	1	2	.08	.0	4.04	24.00	1.10	---	12.72	364.37	690.1
XSECTION 98	REACH	.53	1	2	.08	.0	4.04	24.00	1.10	---	12.97	323.87	613.4
XSECTION 98	ADDHYD	1.82	1	2	.08	.0	4.04	24.00	.53	---	12.92	515.53	283.7
XSECTION 96	REACH	.00	1	2	.08	.0	4.04	24.00	.53	---	12.00*	265.00	**********
XSECTION 96	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.22	---	12.55	148.27	1186.2
XSECTION 96	ADDHYD	.13	1	2	.08	.0	4.04	24.00	23.89	---	12.55	413.27	3306.2
XSECTION 96	DIVERT	.00	1	2	.08	.0	4.04	24.00	23.89	---	11.92*	265.00	**********
XSECTION 97	DIVERT	.13	1	2	.08	.0	4.04	24.00	1.71	---	12.55	148.27	1186.2
XSECTION 97	REACH	.13	1	2	.08	.0	4.04	24.00	1.71	---	12.81	132.85	1062.8
XSECTION 97	RUNOFF	.19	1	2	.08	.0	4.04	24.00	2.66	---	12.54	254.23	1352.3
XSECTION 97	ADDHYD	.31	1	2	.08	.0	4.04	24.00	2.28	---	12.61	365.12	1166.5
XSECTION 98	REACH	.31	1	2	.08	.0	4.04	24.00	2.28	---	12.71	360.71	1152.4
XSECTION 98	ADDHYD	2.13	1	2	.08	.0	4.04	24.00	.78	---	12.84	837.91	393.4
XSECTION 98	RUNOFF	.09	1	2	.08	.0	4.04	24.00	2.57	---	12.49	131.63	1400.3
XSECTION 98	ADDHYD	2.22	1	2	.08	.0	4.04	24.00	.86	---	12.78	891.96	401.1
XSECTION 99	REACH	2.22	1	2	.08	.0	4.04	24.00	.86	---	12.88	887.09	398.9

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
(A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 99	RUNOFF	.09	1	2	.08	.0	4.04	24.00	2.56	---	12.53	126.50	1345.7
XSECTION 99	ADDHYD	2.32	1	2	.08	.0	4.04	24.00	.93	---	12.81	956.00	412.4
XSECTION 139	REACH	2.32	1	2	.08	.0	4.04	24.00	.93	---	12.97	938.01	404.7
XSECTION 100	RUNOFF	.08	1	2	.08	.0	4.04	24.00	2.57	---	12.50	108.52	1391.3
XSECTION 139	REACH	.08	1	2	.08	.0	4.04	24.00	2.57	---	12.50	108.52	1391.3
XSECTION 139	ADDHYD	2.40	1	2	.08	.0	4.04	24.00	.98	---	12.93	964.37	402.5
XSECTION 142	REACH	.00	1	2	.08	.0	4.04	24.00	.98	---	12.32*	265.00**********	
XSECTION 142	RUNOFF	.25	1	2	.08	.0	4.04	24.00	2.28	---	13.03	196.23	784.9
XSECTION 142	ADDHYD	.25	1	2	.08	.0	4.04	24.00	13.32	---	13.03	461.23	1844.9
XSECTION 142	DIVERT	.00	1	2	.08	.0	4.04	24.00	13.32	---	12.00*	265.00**********	
XSECTION 141	DIVERT	.25	1	2	.08	.0	4.04	24.00	1.74	---	13.03	196.23	784.9
XSECTION 141	REACH	.25	1	2	.08	.0	4.04	24.00	1.74	---	13.12	195.92	783.7
XSECTION 141	RUNOFF	.19	1	2	.08	.0	4.04	24.00	2.66	---	12.54	254.23	1352.3
XSECTION 141	ADDHYD	.44	1	2	.08	.0	4.04	24.00	2.13	---	12.64	371.68	848.6
XSECTION 140	REACH	.44	1	2	.08	.0	4.04	24.00	2.13	---	12.64	371.68	848.6
XSECTION 140	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.57	---	12.52	170.38	1363.0
XSECTION 140	ADDHYD	.56	1	2	.08	.0	4.04	24.00	2.23	---	12.58	533.79	948.1
XSECTION 137	RUNOFF	.08	1	2	.08	.0	4.04	24.00	2.06	---	12.55	88.26	1131.6
XSECTION 140	ADDHYD	.64	1	2	.08	.0	4.04	24.00	2.21	---	12.58	621.55	969.7
XSECTION 139	REACH	.64	1	2	.08	.0	4.04	24.00	2.21	---	12.67	616.95	962.5
XSECTION 139	ADDHYD	3.04	1	2	.08	.0	4.04	24.00	1.24	---	12.76	1518.79	500.1
XSECTION 136	RUNOFF	.07	1	2	.08	.0	4.04	24.00	3.47	---	12.44	113.55	1720.5
XSECTION 138	REACH	.07	1	2	.08	.0	4.04	24.00	3.44	---	12.69	107.95	1635.6
XSECTION 138	RUNOFF	.20	1	2	.08	.0	4.04	24.00	2.40	---	12.46	283.21	1395.1
XSECTION 138	ADDHYD	.27	1	2	.08	.0	4.04	24.00	2.65	---	12.47	384.43	1429.1
XSECTION 139	REACH	.27	1	2	.08	.0	4.04	24.00	2.65	---	12.55	384.36	1428.8
XSECTION 139	ADDHYD	3.31	1	2	.08	.0	4.04	24.00	1.35	---	12.66	1821.65	551.0
XSECTION 139	RUNOFF	.19	1	2	.08	.0	4.04	24.00	2.66	---	12.51	263.45	1401.3
XSECTION 139	ADDHYD	3.49	1	2	.08	.0	4.04	24.00	1.42	---	12.64	2056.01	588.4
XSECTION 129	RUNOFF	.11	1	2	.08	.0	4.04	24.00	2.23	---	12.45	148.26	1372.8
XSECTION 130	RUNOFF	.03	1	2	.08	.0	4.04	24.00	3.05	---	12.44	50.77	1637.7
XSECTION 129	ADDHYD	.14	1	2	.08	.0	4.04	24.00	2.41	---	12.45	199.00	1431.7
XSECTION 127	REACH	.14	1	2	.08	.0	4.04	24.00	2.40	---	12.72	178.16	1281.8
XSECTION 128	RUNOFF	.04	1	2	.08	.0	4.04	24.00	2.07	---	12.45	47.02	1306.1
XSECTION 127	REACH	.04	1	2	.08	.0	4.04	24.00	2.05	---	12.84	36.51	1014.1
XSECTION 127	ADDHYD	.17	1	2	.08	.0	4.04	24.00	2.32	---	12.73	211.94	1211.1

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
(A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 127	RUNOFF	.16	1	2	.08	.0	4.04	24.00	2.23	---	12.45	213.56	1343.1
XSECTION 127	ADDHYD	.33	1	2	.08	.0	4.04	24.00	2.28	---	12.49	390.23	1168.4
XSECTION 132	RUNOFF	.14	1	2	.08	.0	4.04	24.00	2.85	---	12.45	222.42	1533.9
XSECTION 133	RUNOFF	.08	1	2	.08	.0	4.04	24.00	3.47	---	12.44	137.64	1720.5
XSECTION 133	ADDHYD	.22	1	2	.08	.0	4.04	24.00	3.07	---	12.44	359.92	1599.6
XSECTION 131	REACH	.22	1	2	.08	.0	4.04	24.00	3.06	---	12.53	354.47	1575.4
XSECTION 131	ADDHYD	.56	1	2	.08	.0	4.04	24.00	2.59	---	12.50	739.70	1323.3
XSECTION 131	RUNOFF	.12	1	2	.08	.0	4.04	24.00	2.57	---	12.46	171.53	1441.4
XSECTION 131	ADDHYD	.68	1	2	.08	.0	4.04	24.00	2.59	---	12.49	909.94	1342.1
XSECTION 126	REACH	.68	1	2	.08	.0	4.04	24.00	2.59	---	12.58	902.38	1331.0
XSECTION 126	RUNOFF	.16	1	2	.08	.0	4.04	24.00	3.46	---	12.44	265.71	1681.7
XSECTION 126	ADDHYD	.84	1	2	.08	.0	4.04	24.00	2.75	---	12.53	1150.40	1376.1
XSECTION 134	REACH	.84	1	2	.08	.0	4.04	24.00	2.75	---	12.62	1145.99	1370.8
XSECTION 135	RUNOFF	.04	1	2	.08	.0	4.04	24.00	3.47	---	12.44	72.26	1720.5
XSECTION 134	REACH	.04	1	2	.08	.0	4.04	24.00	3.44	---	12.79	64.63	1538.8
XSECTION 134	ADDHYD	.88	1	2	.08	.0	4.04	24.00	2.78	---	12.62	1206.51	1374.2
XSECTION 134	RUNOFF	.20	1	2	.08	.0	4.04	24.00	2.48	---	12.47	274.55	1393.7
XSECTION 134	ADDHYD	1.08	1	2	.08	.0	4.04	24.00	2.73	---	12.56	1450.39	1349.2
XSECTION 125	RUNOFF	.12	1	2	.08	.0	4.04	24.00	3.47	---	12.44	201.30	1720.5
XSECTION 125	ADDHYD	1.19	1	2	.08	.0	4.04	24.00	2.80	---	12.51	1617.99	1357.4
XSECTION 124	REACH	1.19	1	2	.08	.0	4.04	24.00	2.79	3.81	12.62	1591.14	1334.8
XSECTION 124	RUNOFF	.22	1	2	.08	.0	4.04	24.00	2.40	---	12.46	303.53	1386.0
XSECTION 124	ADDHYD	1.41	1	2	.08	.0	4.04	24.00	2.73	4.16	12.55	1846.66	1308.8
XSECTION 124	REACH	3.49	1	2	.08	.0	4.04	24.00	1.42	4.44	12.64	2056.01	588.4
XSECTION 124	ADDHYD	4.91	1	2	.08	.0	4.04	24.00	1.80	6.46	12.60	3862.83	787.5
XSECTION 103	RUNOFF	.08	1	2	.08	.0	4.04	24.00	2.40	---	12.46	112.17	1384.9
XSECTION 124	ADDHYD	4.99	1	2	.08	.0	4.04	24.00	1.81	6.55	12.59	3957.48	793.7
XSECTION 104	REACH	4.99	1	2	.08	.0	4.04	24.00	1.81	6.65	12.59	3957.48	793.7
XSECTION 104	ADDHYD	6.97	1	2	.08	.0	4.04	24.00	1.96	7.24	12.61	4566.26	655.6
XSECTION 107	REACH	6.97	1	2	.08	.0	4.04	24.00	1.96	7.78	12.61	4566.26	655.6
XSECTION 107	ADDHYD	9.45	1	2	.08	.0	4.04	24.00	2.04	8.30	12.61	5104.16	540.3
XSECTION 123	RUNOFF	.21	1	2	.08	.0	4.04	24.00	3.46	---	12.44	359.53	1687.9
XSECTION 107	ADDHYD	9.66	1	2	.08	.0	4.04	24.00	2.07	8.56	12.58	5388.14	557.8
XSECTION 108	REACH	9.66	1	2	.08	.0	4.04	24.00	2.07	7.26	12.58	5388.14	557.8
XSECTION 108	RUNOFF	.03	1	2	.08	.0	4.04	24.00	2.31	---	12.47	33.45	1338.1
XSECTION 108	ADDHYD	9.68	1	2	.08	.0	4.04	24.00	2.07	7.28	12.58	5418.26	559.5

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
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A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 148	RUNOFF	.03	1	2	.08	.0	4.04	24.00	2.23	---	12.45	45.22	1370.4
XSECTION 47	REACH	.03	1	2	.08	.0	4.04	24.00	2.21	---	12.82	38.55	1168.1
XSECTION 47	RUNOFF	.07	1	2	.08	.0	4.04	24.00	2.23	---	12.45	99.73	1366.1
XSECTION 47	ADDHYD	.11	1	2	.08	.0	4.04	24.00	2.22	---	12.46	127.59	1203.6
XSECTION 46	REACH	.11	1	2	.08	.0	4.04	24.00	2.21	---	12.68	112.52	1061.5
XSECTION 46	RUNOFF	.05	1	2	.08	.0	4.04	24.00	2.23	---	12.45	72.63	1370.4
XSECTION 46	ADDHYD	.16	1	2	.08	.0	4.04	24.00	2.22	---	12.49	166.54	1047.4
XSECTION 149	REACH	.16	1	2	.08	.0	4.04	24.00	2.21	---	12.73	148.06	931.2
XSECTION 149	RUNOFF	.01	1	2	.08	.0	4.04	24.00	2.95	---	12.44	14.49	1610.6
XSECTION 149	ADDHYD	.17	1	2	.08	.0	4.04	24.00	2.25	---	12.72	150.51	895.9
XSECTION 147	RUNOFF	.05	1	2	.08	.0	4.04	24.00	2.23	---	12.45	71.26	1370.4
XSECTION 146	REACH	.05	1	2	.08	.0	4.04	24.00	2.21	---	12.74	61.57	1184.1
XSECTION 146	RUNOFF	.07	1	2	.08	.0	4.04	24.00	2.23	---	12.45	98.36	1366.1
XSECTION 146	ADDHYD	.12	1	2	.08	.0	4.04	24.00	2.22	---	12.47	148.20	1195.2
XSECTION 45	REACH	.12	1	2	.08	.0	4.04	24.00	2.22	---	12.56	145.58	1174.0
XSECTION 43	RUNOFF	.05	1	2	.08	.0	4.04	24.00	2.95	---	12.44	75.70	1610.6
XSECTION 21	REACH	.05	1	2	.08	.0	4.04	24.00	2.93	---	12.80	67.57	1437.6
XSECTION 21	ADDHYD	.17	1	2	.08	.0	4.04	24.00	2.41	---	12.58	205.80	1203.5
XSECTION 21	RUNOFF	.19	1	2	.08	.0	4.04	24.00	2.65	---	12.55	249.78	1321.6
XSECTION 21	ADDHYD	.36	1	2	.08	.0	4.04	24.00	2.54	---	12.57	455.32	1264.8
XSECTION 45	REACH	.36	1	2	.08	.0	4.04	24.00	2.54	---	12.57	455.32	1264.8
XSECTION 45	RUNOFF	.12	1	2	.08	.0	4.04	24.00	2.94	---	12.52	169.91	1464.8
XSECTION 45	ADDHYD	.48	1	2	.08	.0	4.04	24.00	2.64	---	12.56	624.18	1311.3
XSECTION 45	ADDHYD	.64	1	2	.08	.0	4.04	24.00	2.53	---	12.57	765.61	1188.8
XSECTION 151	DIVERT	.00	1	2	.08	.0	4.04	24.00	2.53	---	11.92*	267.00	**********
XSECTION 45	DIVERT	.64	1	2	.08	.0	4.04	24.00	.86	---	12.57	498.61	774.2
XSECTION 59	REACH	.00	1	2	.08	.0	4.04	24.00	.86	---	13.16	267.67	**********
XSECTION 151	DIVERT	.00	1	2	.08	.0	4.04	24.00	.86	---	11.84*	61.00	**********
XSECTION 43	DIVERT	.00	1	2	.08	.0	4.04	24.00	.86	---	13.16	206.67	**********
XSECTION 55	ADDHYD	.64	1	2	.08	.0	4.04	24.00	1.69	---	12.57	702.32	1090.6
XSECTION 150	RUNOFF	.02	1	2	.08	.0	4.04	24.00	2.23	---	12.45	21.93	1370.4
XSECTION 57	REACH	.02	1	2	.08	.0	4.04	24.00	2.20	---	12.93	16.21	1012.9
XSECTION 57	RUNOFF	.05	1	2	.08	.0	4.04	24.00	2.23	---	12.46	65.96	1319.1
XSECTION 57	ADDHYD	.07	1	2	.08	.0	4.04	24.00	2.22	---	12.48	75.32	1141.2
XSECTION 59	REACH	.07	1	2	.08	.0	4.04	24.00	2.20	---	12.80	64.33	974.7
XSECTION 59	RUNOFF	.05	1	2	.08	.0	4.04	24.00	2.23	---	12.46	69.91	1319.1

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A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 59	ADDHYD	.12	1	2	.08	.0	4.04	24.00	2.21	---	12.52	118.64	997.0
XSECTION 150	DIVERT	.00	1	2	.08	.0	4.04	24.00	2.21	---	11.68*	13.00	**********
XSECTION 59	DIVERT	.12	1	2	.08	.0	4.04	24.00	1.35	---	12.52	105.64	887.7
XSECTION 49	RUNOFF	.09	1	2	.08	.0	4.04	24.00	3.46	---	12.44	146.94	1708.6
XSECTION 50	REACH	.09	1	2	.08	.0	4.04	24.00	3.44	---	12.80	133.69	1554.5
XSECTION 50	RUNOFF	.09	1	2	.08	.0	4.04	24.00	3.45	---	12.48	149.09	1620.6
XSECTION 50	ADDHYD	.18	1	2	.08	.0	4.04	24.00	3.44	---	12.55	269.33	1513.1
XSECTION 20	RUNOFF	.06	1	2	.08	.0	4.04	24.00	3.47	---	12.44	110.00	1718.8
XSECTION 48	REACH	.06	1	2	.08	.0	4.04	24.00	3.43	---	12.98	90.52	1414.4
XSECTION 48	RUNOFF	.09	1	2	.08	.0	4.04	24.00	2.22	---	12.59	105.20	1143.5
XSECTION 48	ADDHYD	.16	1	2	.08	.0	4.04	24.00	2.71	---	12.66	178.58	1144.7
XSECTION 50	REACH	.16	1	2	.08	.0	4.04	24.00	2.70	---	12.93	156.04	1000.2
XSECTION 50	ADDHYD	.33	1	2	.08	.0	4.04	24.00	3.10	---	12.65	394.21	1180.3
XSECTION 52	REACH	.33	1	2	.08	.0	4.04	24.00	3.10	---	12.75	392.30	1174.5
XSECTION 52	RUNOFF	.05	1	2	.08	.0	4.04	24.00	2.23	---	12.45	74.56	1355.7
XSECTION 52	ADDHYD	.39	1	2	.08	.0	4.04	24.00	2.97	---	12.57	421.29	1083.0
XSECTION 56	REACH	.39	1	2	.08	.0	4.04	24.00	2.97	---	12.83	402.41	1034.5
XSECTION 56	RUNOFF	.07	1	2	.08	.0	4.04	24.00	2.23	---	12.46	88.38	1319.1
XSECTION 56	ADDHYD	.46	1	2	.08	.0	4.04	24.00	2.86	---	12.60	445.07	976.0
XSECTION 51	REACH	.46	1	2	.08	.0	4.04	24.00	2.85	---	12.83	423.88	929.6
XSECTION 51	RUNOFF	.03	1	2	.08	.0	4.04	24.00	2.23	---	12.45	42.48	1370.4
XSECTION 51	ADDHYD	.49	1	2	.08	.0	4.04	24.00	2.81	---	12.81	428.63	880.1
XSECTION 55	REACH	.49	1	2	.08	.0	4.04	24.00	2.81	---	13.04	420.89	864.3
XSECTION 55	RUNOFF	.02	1	2	.08	.0	4.04	24.00	2.23	---	12.45	23.30	1370.4
XSECTION 55	ADDHYD	.50	1	2	.08	.0	4.04	24.00	2.79	---	13.04	422.99	839.3
XSECTION 151	DIVERT	.00	1	2	.08	.0	4.04	24.00	2.79	---	11.92*	67.00	**********
XSECTION 37	DIVERT	.50	1	2	.08	.0	4.04	24.00	1.64	1453.91	13.04	355.99	706.3
XSECTION 55	ADDHYD	.62	1	2	.08	.0	4.04	24.00	1.59	---	12.90	407.84	654.6
XSECTION 55	ADDHYD	1.27	1	2	.08	.0	4.04	24.00	1.64	---	12.60	1078.87	851.5
STRUCTURE 59	RESVOR	1.27	1	2	.08	.0	4.04	24.00	1.64	1406.36	13.62	370.00	292.0
XSECTION 66	REACH	1.27	1	2	.08	.0	4.04	24.00	1.64	---	13.62	370.00	292.0
XSECTION 66	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.39	---	12.53	81.13	1287.7
XSECTION 66	ADDHYD	1.33	1	2	.08	.0	4.04	24.00	1.68	---	12.72	381.49	286.8
XSECTION 67	REACH	1.33	1	2	.08	.0	4.04	24.00	1.68	---	12.72	381.49	286.8
XSECTION 67	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.76	---	12.45	95.29	1512.5
XSECTION 67	ADDHYD	1.39	1	2	.08	.0	4.04	24.00	1.73	---	12.55	454.60	326.3

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
(A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 44	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.66	---	12.47	182.98	1463.9
XSECTION 67	REACH	.13	1	2	.08	.0	4.04	24.00	2.66	---	12.57	179.72	1437.8
XSECTION 67	ADDHYD	1.52	1	2	.08	.0	4.04	24.00	1.80	---	12.56	634.16	417.8
XSECTION 69	REACH	1.52	1	2	.08	.0	4.04	24.00	1.80	---	12.56	634.16	417.8
XSECTION 69	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.14	---	12.60	69.10	1096.8
XSECTION 69	ADDHYD	1.58	1	2	.08	.0	4.04	24.00	1.82	---	12.56	702.62	444.4
XSECTION 23	RUNOFF	.09	1	2	.08	.0	4.04	24.00	3.46	---	12.44	154.39	1696.6
XSECTION 40	REACH	.09	1	2	.08	.0	4.04	24.00	3.44	---	12.73	143.22	1573.8
XSECTION 38	RUNOFF	.13	1	2	.08	.0	4.04	24.00	2.48	---	12.52	167.08	1336.7
XSECTION 40	REACH	.13	1	2	.08	.0	4.04	24.00	2.47	---	12.75	155.72	1245.8
XSECTION 40	ADDHYD	.22	1	2	.08	.0	4.04	24.00	2.88	---	12.74	298.88	1383.7
XSECTION 40	RUNOFF	.09	1	2	.08	.0	4.04	24.00	2.22	---	12.55	111.50	1186.2
XSECTION 40	ADDHYD	.31	1	2	.08	.0	4.04	24.00	2.68	---	12.66	397.19	1281.3
XSECTION 82	REACH	.31	1	2	.08	.0	4.04	24.00	2.67	---	12.77	392.44	1265.9
XSECTION 82	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.40	---	12.46	86.69	1376.0
XSECTION 82	ADDHYD	.37	1	2	.08	.0	4.04	24.00	2.63	---	12.60	438.07	1174.5
XSECTION 39	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.48	---	12.55	80.11	1281.8
XSECTION 82	REACH	.06	1	2	.08	.0	4.04	24.00	2.47	---	12.81	72.97	1167.5
XSECTION 82	ADDHYD	.44	1	2	.08	.0	4.04	24.00	2.60	---	12.63	502.11	1153.0
XSECTION 81	REACH	.44	1	2	.08	.0	4.04	24.00	2.60	---	12.75	498.26	1144.1
XSECTION 81	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.39	---	12.55	79.29	1258.6
XSECTION 81	ADDHYD	.50	1	2	.08	.0	4.04	24.00	2.57	---	12.70	564.94	1133.3
XSECTION 22	RUNOFF	.15	1	2	.08	.0	4.04	24.00	2.66	---	12.52	212.40	1388.2
XSECTION 41	REACH	.15	1	2	.08	.0	4.04	24.00	2.65	---	12.74	203.21	1328.1
XSECTION 41	RUNOFF	.17	1	2	.08	.0	4.04	24.00	2.39	---	12.50	227.58	1323.2
XSECTION 41	ADDHYD	.32	1	2	.08	.0	4.04	24.00	2.51	---	12.55	412.55	1269.4
XSECTION 42	RUNOFF	.08	1	2	.08	.0	4.04	24.00	2.66	---	12.45	116.72	1496.4
XSECTION 42	ADDHYD	.40	1	2	.08	.0	4.04	24.00	2.54	---	12.51	519.87	1290.0
XSECTION 78	REACH	.40	1	2	.08	.0	4.04	24.00	2.54	---	12.62	509.79	1265.0
XSECTION 81	DIVERT	.00	1	2	.08	.0	4.04	24.00	2.54	---	12.08*	154.00	**********
XSECTION 78	DIVERT	.50	1	2	.08	.0	4.04	24.00	1.12	---	12.70	410.94	824.4
XSECTION 78	REACH	.50	1	2	.08	.0	4.04	24.00	1.12	---	12.83	402.38	807.2
XSECTION 78	ADDHYD	.90	1	2	.08	.0	4.04	24.00	1.75	---	12.69	866.54	961.2
XSECTION 78	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.57	---	12.46	90.81	1441.4
XSECTION 78	ADDHYD	.96	1	2	.08	.0	4.04	24.00	1.81	---	12.65	920.08	953.9
XSECTION 77	REACH	.96	1	2	.08	.0	4.04	24.00	1.80	---	12.75	913.56	947.2

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED
(A STAR(*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION BEGIN (HR)	PRECIPITATION AMOUNT (IN)	PRECIPITATION DURATION (HR)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1													
XSECTION 77	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.57	---	12.49	87.65	1391.3
XSECTION 77	ADDHYD	1.03	1	2	.08	.0	4.04	24.00	1.85	---	12.72	968.33	942.4
XSECTION 69	ADDHYD	2.61	1	2	.08	.0	4.04	24.00	1.83	---	12.65	1629.04	624.5
STRUCTURE 69	RESVOR	2.61	1	2	.08	.0	4.04	24.00	1.81	1388.84	15.13	340.57	130.6
XSECTION 75	REACH	2.61	1	2	.08	.0	4.04	24.00	1.81	---	15.13	340.57	130.6
XSECTION 80	REACH	.00	1	2	.08	.0	4.04	24.00	1.81	---	12.08*	154.00	**********
XSECTION 80	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.22	---	12.53	77.30	1226.9
XSECTION 80	ADDHYD	.06	1	2	.08	.0	4.04	24.00	13.75	---	12.53	231.30	3671.4
XSECTION 80	DIVERT	.00	1	2	.08	.0	4.04	24.00	13.75	---	12.00*	166.00	**********
XSECTION 79	DIVERT	.06	1	2	.08	.0	4.04	24.00	1.14	---	12.53	65.30	1036.5
XSECTION 79	REACH	.06	1	2	.08	.0	4.04	24.00	1.15	---	12.75	61.14	970.4
XSECTION 79	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.76	---	12.45	95.29	1512.5
XSECTION 79	ADDHYD	.13	1	2	.08	.0	4.04	24.00	1.95	---	12.50	142.30	1129.4
XSECTION 76	REACH	.13	1	2	.08	.0	4.04	24.00	1.95	---	12.62	137.32	1089.8
XSECTION 76	RUNOFF	.06	1	2	.08	.0	4.04	24.00	2.57	---	12.46	91.40	1450.7
XSECTION 76	ADDHYD	.19	1	2	.08	.0	4.04	24.00	2.16	---	12.53	219.20	1159.8
XSECTION 75	REACH	.19	1	2	.08	.0	4.04	24.00	2.15	---	12.63	212.52	1124.5
XSECTION 75	ADDHYD	2.80	1	2	.08	.0	4.04	24.00	1.83	---	12.66	518.41	185.3
XSECTION 75	RUNOFF	.06	1	2	.08	.0	4.04	24.00	3.45	---	12.50	101.37	1609.0
XSECTION 75	ADDHYD	2.86	1	2	.08	.0	4.04	24.00	1.87	---	12.62	613.58	214.5
XSECTION 112	REACH	2.86	1	2	.08	.0	4.04	24.00	1.87	---	12.62	613.58	214.5

SUMMARY TABLE 2 - SELECTED MODIFIED ATT-KIN REACH ROUTINGS IN ORDER OF STANDARD EXECUTIVE CONTROL INSTRUCTIONS
(A STAR(*) AFTER VOLUME ABOVE BASE(IN) INDICATES A HYDROGRAPH TRUNCATED AT A VALUE EXCEEDING BASE + 10% OF PEAK
A QUESTION MARK(?) AFTER COEFF.(C) INDICATES PARAMETERS OUTSIDE ACCEPTABLE LIMITS, SEE PREVIOUS WARNINGS)

		HYDROGRAPH INFORMATION							ROUTING PARAMETERS									PEAK	
		INFLOW		OUTFLOW		OUTFLOW+ INTERV.AREA						Q AND A EQUATION						TRAVEL TIME	
XSEC ID	REACH LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	BASE-FLOW (CFS)	VOLUME ABOVE BASE (IN)	MAIN TIME INCR (HR)	ITER-ATION #	COEFF (X)	POWER (M)	LENGTH FACTOR (K*)	PEAK RATIO O/I (Q*)	S/Q @PEAK (K) (SEC)	ATT-KIN COEFF (C)	STOR-AGE (HR)	KINE-MATIC (HR)
ALTERNATE		1	STORM	1															
3	1000	247	12.5	244	12.6	---	---	0	3.46	.08	1	.040	1.66	.049	.989	468	.47	.08	.13
3	1400	162	12.5	158	12.7	---	---	0	3.46	.08	1	.040	1.66	.112	.974	775	.31	.08	.22
6	1600	446	12.6	443	12.7	---	---	0	3.19	.08	1	1.53	1.21	.049	.992	329	.61	.16	.09
5	1400	284	12.5	282	12.6	354	12.6	0	3.46	.08	1	.050	1.66	.062	.991	542	.42	.08	.15
6	800	354	12.6	354	12.6	---	---	0	2.95	.08	0	.360	1.66	.003	1.000	86	1.00?	.00	.00
8	900	899	12.6	899	12.6	---	---	0	2.92	.08	0	.170	1.66	.004	1.000	106	1.00?	.00	.00
4	1200	37	12.5	34	12.8	---	---	0	3.47	.08	1	.040	1.66	.231	.921	1198	.21	.08	.34
4	1300	71	12.5	66	12.7	---	---	0	3.45	.08	1	.070	1.66	.083	.936	714	.34	.16	.20
5	1900	172	12.6	146	13.0	---	---	0	1.90	.08	1	.040	1.66	.184	.852	1029	.25	.24	.29
8	1300	113	12.6	112	12.7	---	---	0	2.61	.08	1	1.81	1.25	.030	.994	251	.73?	.16	.07
144	1400	36	12.5	26	13.0	60	12.6	0	1.83	.08	1	.030	1.66	.604	.709	1674	.16	.24	.50
9	600	60	12.6	58	12.7	93	12.6	0	1.90	.08	1	.060	1.66	.031	.968	386	.54	.16	.11
7	2000	93	12.6	82	12.9	182	12.7	0	1.93	.08	1	.090	1.66	.118	.881	848	.29	.24	.24
8	1000	182	12.7	182	12.7	---	---	0	1.87	.08	0	4.62	1.25	.007	1.000	83	1.00?	.00	.00
8	1200	35	12.6	35	12.6	215	12.7	0	1.98	.08	1	3.30	1.25	.027	.997	182	.88?	.08	.05
14	3000	402	13.4	399	13.8	---	---	0	2.42	.08	1	.220	1.48	.017	.991	806	.30	.32	.22
15	1300	156	12.6	155	12.6	224	12.6	0	2.56	.08	1	.540	1.54	.018	.995	214	.80?	.08	.06
11	2640	63	12.6	58	12.7	171	12.7	0	1.83	.08	1	.440	1.54	.118	.911	682	.35	.16	.19
13	1320	171	12.7	171	12.7	306	12.6	0	1.92	.08	0	1.80	1.67	.002	1.000	71	1.00?	.00	.00
14	2640	104	12.6	103	12.6	---	---	0	1.98	.08	1	2.10	1.50	.024	.992	228	.77?	.08	.06
14	1320	409	12.6	409	12.6	---	---	0	2.03	.08	0	1.64	1.67	.001	1.000	53	1.00?	.00	.00
27	3000	1102	12.6	1034	12.8	1186	12.8	0	2.33	.08	1	.110	1.57	.024	.938	613	.38	.16	.17
25	2200	99	12.5	89	12.9	189	12.6	0	3.47	.08	1	.050	1.66	.264	.905	1297	.20	.08	.37
27	1700	189	12.6	174	12.7	---	---	0	2.76	.08	1	.110	1.57	.084	.922	659	.36	.16	.19
26	1500	53	11.8	53	12.2	---	---	0	.00	.08	1	3.78	1.25	.008	1.000	187	.87?	.40	.05
27	2500	21	11.9	21	12.8	---	---	0	.00*	.08	1	4.41	1.25	.010	1.000	332	.61	.88	.09
37	3000	1462	12.8	1447	12.9	1473	12.9	0	2.50	.08	1	.474	1.49	.010	.990	297	.65	.08	.08
37	2100	214	12.6	202	12.7	---	---	0	1.33	.08	1	.210	1.54	.163	.943	573	.40	.08	.16
36	3500	128	12.8	95	13.3	183	12.6	0	1.28	.08	1	.060	1.66	.636	.747	1669	.16	.32	.49
35	1320	142	12.6	139	12.8	280	12.6	0	2.38	.08	1	.320	1.54	.029	.980	316	.63	.16	.09
36	1320	280	12.6	280	12.6	---	---	0	2.34	.08	0	4.48	1.25	.011	1.000	103	1.00?	.00	.00
37	1320	464	12.6	464	12.6	---	---	0	2.02	.08	0	4.64	1.25	.008	1.000	91	1.00?	.00	.00

SUMMARY TABLE 2 - SELECTED MODIFIED ATT-KIN REACH ROUTINGS IN ORDER OF STANDARD EXECUTIVE CONTROL INSTRUCTIONS
(A STAR(*) AFTER VOLUME ABOVE BASE(IN) INDICATES A HYDROGRAPH TRUNCATED AT A VALUE EXCEEDING BASE + 10% OF PEAK
A QUESTION MARK(?) AFTER COEFF.(C) INDICATES PARAMETERS OUTSIDE ACCEPTABLE LIMITS, SEE PREVIOUS WARNINGS)

		HYDROGRAPH INFORMATION							ROUTING PARAMETERS										PEAK	
		INFLOW		OUTFLOW		OUTFLOW+ INTERV.AREA						Q AND A EQUATION						TRAVEL TIME	
XSEC ID	REACH LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	BASE-FLOW (CFS)	VOLUME ABOVE BASE (IN)	MAIN TIME INCR (HR)	ITER-ATION #	COEFF (X)	POWER (M)	LENGTH FACTOR (K*)	PEAK RATIO O/I (Q*)	S/Q @PEAK (K) (SEC)	ATT-KIN COEFF (C)	STOR-AGE (HR)	KINE-MATIC (HR)
ALTERNATE		1	STORM	1															
85	660	517	14.7	517	14.7	521	14.7	0	2.27*	.08	0	3.21	1.25	.000	1.000	60	1.00?	.00	.00
84	1320	521	14.7	521	14.7	525	14.7	0	2.27*	.08	0	3.21	1.25	.001	1.000	119	1.00?	.00	.00
90	1320	168	12.6	165	12.6	297	12.6	0	2.57	.08	1	.220	1.54	.044	.982	380	.55	.08	.11
88	1320	297	12.6	293	12.7	405	12.7	0	2.52	.08	1	.220	1.54	.031	.986	311	.63	.08	.09
88	2000	62	12.5	56	12.7	---	---	0	2.39	.08	1	.220	1.54	.156	.906	816	.30	.16	.23
101	1050	461	12.7	459	12.8	506	12.7	0	2.53	.08	1	.220	1.54	.016	.995	212	.81?	.08	.06
102	1320	506	12.7	474	13.0	517	12.9	0	2.56	.08	1	.020	1.66	.091	.937	706	.34	.24	.20
104	1900	517	12.9	462	13.2	---	---	0	2.51	.08	1	.020	1.66	.140	.894	1007	.25	.32	.29
87	1320	91	12.5	81	12.7	161	12.6	0	2.57	.08	1	.118	1.45	.212	.892	984	.26	.16	.28
105	2000	161	12.6	140	13.0	180	12.8	0	2.61	.08	1	.287	1.34	.201	.869	1066	.24	.16	.30
104	1320	180	12.8	176	13.0	222	12.9	0	2.36	.08	1	.150	1.54	.042	.974	475	.47	.24	.13
105	1320	187	14.7	187	14.8	---	---	0	2.31*	.08	1	3.07	1.25	.001	1.000	151	.98?	.08	.04
104	1320	187	14.8	186	14.9	---	---	0	2.30*	.08	1	1.85	1.25	.002	1.000	227	.78?	.08	.06
83	1320	338	14.7	338	14.7	403	12.6	0	2.25*	.08	0	8.46	1.25	.000	1.000	60	1.00?	.00	.00
106	1320	403	12.6	403	12.6	468	12.6	0	2.26*	.08	0	5.48	1.25	.001	1.000	82	1.00?	.00	.00
107	900	468	12.6	468	12.6	536	12.6	0	2.25*	.08	0	3.59	1.25	.001	1.000	76	1.00?	.00	.00
145	1500	128	12.6	128	12.6	---	---	0	2.13	.08	0	6.10	1.25	.011	1.000	107	1.00?	.00	.00
145	2350	393	12.6	393	12.6	---	---	0	2.06	.08	0	6.09	1.25	.016	1.000	134	1.00?	.00	.00
33	3500	127	12.8	112	13.1	156	13.0	0	1.97	.08	1	.145	1.66	.134	.880	983	.26	.24	.28
93	2640	120	13.4	119	13.5	354	12.6	0	1.74*	.08	1	3.50	1.25	.004	.998	298	.65	.08	.08
92	1320	89	12.6	72	12.7	228	12.6	0	.05	.08	1	.080	1.66	.582	.804	610	.38	.16	.18
98	2500	228	12.6	200	12.9	---	---	0	.29	.08	1	.080	1.66	.172	.878	797	.31	.16	.23
95	1320	265	12.2	265	12.2	---	---	0	.00*	.08	0	4.72	1.25	.002	1.000	100	1.00?	.00	.00
32	3400	99	12.6	60	13.4	193	12.9	0	2.30	.08	1	.030	1.66	.996	.609	2725	.10	.40	.83
94	3200	193	12.9	172	13.2	257	12.6	0	2.12	.08	1	.090	1.66	.100	.891	1014	.25	.24	.29
95	2400	257	12.6	232	12.7	364	12.7	0	2.21	.08	1	.090	1.66	.038	.905	679	.35	.16	.19
98	3000	364	12.7	324	13.0	---	---	0	1.10	.08	1	.080	1.66	.179	.888	793	.31	.16	.23
96	1320	265	12.0	265	12.0	413	12.6	0	.00*	.08	0	4.72	1.25	.001	1.000	100	1.00?	.00	.00
97	2100	148	12.6	133	12.8	363	12.6	0	1.71	.08	1	.080	1.66	.213	.896	794	.31	.16	.23
98	1000	363	12.6	361	12.7	---	---	0	2.28	.08	1	.080	1.66	.021	.992	265	.70?	.08	.07
99	1250	891	12.8	887	12.9	956	12.8	0	.86	.08	1	.080	1.66	.014	.996	232	.77?	.08	.06
139	1600	956	12.8	938	13.0	---	---	0	.93	.08	1	.050	1.66	.030	.982	383	.55	.16	.11

SUMMARY TABLE 2 - SELECTED MODIFIED ATT-KIN REACH ROUTINGS IN ORDER OF STANDARD EXECUTIVE CONTROL INSTRUCTIONS
(A STAR(*) AFTER VOLUME ABOVE BASE(IN) INDICATES A HYDROGRAPH TRUNCATED AT A VALUE EXCEEDING BASE + 10% OF PEAK
A QUESTION MARK(?) AFTER COEFF.(C) INDICATES PARAMETERS OUTSIDE ACCEPTABLE LIMITS, SEE PREVIOUS WARNINGS)

		HYDROGRAPH INFORMATION							ROUTING PARAMETERS									PEAK	
		INFLOW		OUTFLOW		OUTFLOW+ INTERV.AREA						Q AND A EQUATION						TRAVEL TIME	
XSEC ID	REACH LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	BASE-FLOW (CFS)	VOLUME ABOVE BASE (IN)	MAIN TIME INCR (HR)	ITER-ATION #	COEFF (X)	POWER (M)	LENGTH FACTOR (K*)	PEAK RATIO O/I (Q*)	S/Q @PEAK (K) (SEC)	ATT-KIN COEFF (C)	STOR-AGE (HR)	KINE-MATIC (HR)
ALTERNATE		1	STORM	1															
139	600	108	12.5	108	12.5	963	13.0	0	2.57	.08	0	6.13	1.25	.004	1.000	44	1.00?	.00	.00
142	2640	265	11.9	265	12.3	461	13.0	0	.00*	.08	1	5.68	1.25	.003	1.000	172	.91?	.40	.05
141	2100	196	13.0	196	13.1	372	12.6	0	1.74	.08	1	4.34	1.25	.020	.999	181	.89?	.08	.05
140	1320	372	12.6	372	12.6	533	12.6	0	2.13	.08	0	4.21	1.25	.008	1.000	102	1.00?	.00	.00
139	2800	621	12.6	614	12.6	---	---	0	2.21	.08	1	3.78	1.25	.024	.990	214	.81?	.08	.06
138	3000	111	12.5	108	12.7	384	12.5	0	3.47	.08	1	.170	1.66	.120	.973	809	.30	.08	.23
139	2000	384	12.5	384	12.6	---	---	0	2.65	.08	1	4.52	1.25	.019	1.000	146	.99?	.08	.04
127	2500	195	12.5	178	12.7	---	---	0	2.41	.08	1	.080	1.66	.177	.913	847	.29	.08	.24
127	2300	46	12.5	36	12.9	212	12.7	0	2.07	.08	1	.080	1.66	.443	.781	1382	.19	.16	.40
131	2000	355	12.5	353	12.6	---	---	0	3.07	.08	1	.170	1.66	.032	.992	339	.60	.08	.09
126	1500	910	12.5	901	12.6	1145	12.6	0	2.59	.08	1	.110	1.66	.016	.990	228	.78?	.08	.06
134	1500	1145	12.6	1143	12.6	---	---	0	2.75	.08	1	.130	1.66	.011	.998	188	.87?	.08	.05
134	3200	70	12.5	65	12.8	1204	12.6	0	3.47	.08	1	.130	1.66	.236	.919	1214	.21	.08	.34
124	2500	1614	12.5	1589	12.6	1846	12.6	0	2.80	.08	1	.090	1.66	.029	.985	341	.59	.16	.09
124	900	2056	12.6	2056	12.6	---	---	0	1.42	.08	0	.694	1.60	.001	1.000	40	1.00?	.00	.00
104	1320	3944	12.6	3944	12.6	---	---	0	1.81	.08	0	.568	1.58	.002	1.000	57	1.00?	.00	.00
107	1000	4554	12.6	4554	12.6	---	---	0	1.96	.08	0	1.17	1.49	.001	1.000	37	1.00?	.00	.00
108	1700	5376	12.6	5376	12.6	5408	12.6	0	2.07	.08	0	1.06	1.52	.001	1.000	56	1.00?	.00	.00
47	1101	44	12.5	38	12.8	127	12.5	0	2.23	.08	1	.040	1.66	.256	.865	1020	.25	.08	.29
46	1285	127	12.5	111	12.7	166	12.5	0	2.22	.08	1	.040	1.66	.137	.875	784	.31	.16	.22
149	1331	166	12.5	148	12.7	150	12.7	0	2.22	.08	1	.040	1.66	.097	.889	730	.33	.16	.21
146	1240	70	12.5	61	12.7	148	12.5	0	2.23	.08	1	.040	1.66	.231	.878	959	.26	.08	.27
45	413	148	12.5	146	12.6	---	---	0	2.22	.08	1	.040	1.66	.019	.984	237	.76?	.08	.07
21	1377	74	12.5	68	12.8	205	12.6	0	2.95	.08	1	.040	1.66	.216	.913	1042	.24	.08	.29
45	3213	455	12.6	455	12.6	624	12.6	0	2.54	.08	0	9.02	1.25	.015	1.000	130	1.00?	.00	.00
59	1300	267	11.9	267	13.2	---	---	0	.00	.08	1	.040	1.66	.024	1.000	590	.39	1.28	.16
57	1350	22	12.5	16	13.0	75	12.5	0	2.23	.08	1	.040	1.66	.579	.747	1668	.16	.16	.49
59	1330	75	12.5	64	12.8	117	12.6	0	2.22	.08	1	.040	1.66	.189	.854	999	.25	.16	.29
50	1928	144	12.5	134	12.8	269	12.6	0	3.46	.08	1	.040	1.66	.206	.929	1119	.23	.08	.32
48	2570	107	12.5	90	13.0	178	12.6	0	3.47	.08	1	.040	1.66	.404	.843	1678	.16	.08	.48
50	1836	178	12.6	156	13.0	---	---	0	2.71	.08	1	.040	1.66	.132	.873	979	.26	.32	.28
52	550	394	12.6	391	12.7	421	12.6	0	3.10	.08	1	.040	1.66	.009	.993	214	.80?	.08	.06

SUMMARY TABLE 2 - SELECTED MODIFIED ATT-KIN REACH ROUTINGS IN ORDER OF STANDARD EXECUTIVE CONTROL INSTRUCTIONS
(A STAR(*) AFTER VOLUME ABOVE BASE(IN) INDICATES A HYDROGRAPH TRUNCATED AT A VALUE EXCEEDING BASE + 10% OF PEAK
A QUESTION MARK(?) AFTER COEFF.(C) INDICATES PARAMETERS OUTSIDE ACCEPTABLE LIMITS, SEE PREVIOUS WARNINGS)

		HYDROGRAPH INFORMATION							ROUTING PARAMETERS									PEAK	
		INFLOW		OUTFLOW		OUTFLOW+ INTERV.AREA						Q AND A EQUATION						TRAVEL TIME	
XSEC ID	REACH LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	BASE-FLOW (CFS)	VOLUME ABOVE BASE (IN)	MAIN TIME INCR (HR)	ITER-ATION #	COEFF (X)	POWER (M)	LENGTH FACTOR (K*)	PEAK RATIO O/I (Q*)	S/Q @PEAK (K) (SEC)	ATT-KIN COEFF (C)	STOR-AGE (HR)	KINE-MATIC (HR)
ALTERNATE		1	STORM	1															
56	1377	421	12.6	402	12.8	444	12.6	0	2.97	.08	1	.040	1.66	.036	.955	522	.43	.24	.15
51	1377	444	12.6	424	12.8	429	12.8	0	2.86	.08	1	.040	1.66	.031	.955	511	.44	.16	.14
55	1331	429	12.8	421	13.0	423	13.0	0	2.81	.08	1	.040	1.66	.026	.982	501	.45	.24	.14
66	660	370	13.6	370	13.6	381	12.7	0	1.64	.08	0	5.64	1.25	.001	1.000	41	1.00?	.00	.00
67	1320	381	12.7	381	12.7	455	12.6	0	1.68	.08	0	7.18	1.25	.002	1.000	66	1.00?	.00	.00
67	1320	183	12.5	180	12.6	---	---	0	2.66	.08	1	.250	1.54	.040	.982	339	.60	.08	.09
69	1320	634	12.6	634	12.6	703	12.6	0	1.80	.08	0	3.06	1.25	.005	1.000	119	1.00?	.00	.00
40	2650	153	12.5	143	12.7	---	---	0	3.46	.08	1	.080	1.66	.169	.939	991	.25	.08	.28
40	1800	166	12.6	155	12.7	299	12.7	0	2.48	.08	1	.080	1.66	.099	.938	651	.36	.08	.18
82	1400	397	12.6	392	12.8	435	12.6	0	2.68	.08	1	.100	1.66	.024	.987	313	.63	.16	.09
82	1867	80	12.6	73	12.8	---	---	0	2.48	.08	1	.100	1.66	.129	.911	788	.31	.16	.22
81	1320	502	12.6	497	12.7	564	12.7	0	2.60	.08	1	.220	1.54	.019	.990	259	.71?	.08	.07
41	3100	211	12.6	203	12.7	412	12.6	0	2.66	.08	1	.240	1.66	.066	.964	526	.43	.08	.15
78	1600	518	12.5	508	12.6	---	---	0	2.54	.08	1	.090	1.66	.031	.982	343	.59	.16	.10
78	1320	410	12.7	401	12.8	---	---	0	1.12	.08	1	.090	1.66	.049	.978	310	.63	.08	.09
77	1320	919	12.6	911	12.7	968	12.7	0	1.81	.08	1	.230	1.54	.017	.990	203	.83?	.08	.06
75	1320	341	15.1	341	15.1	---	---	0	1.81	.08	0	3.79	1.25	.001	1.000	113	1.00?	.00	.00
80	1320	154	12.1	154	12.1	231	12.6	0	.00	.08	0	7.06	1.25	.003	1.000	81	1.00?	.00	.00
79	1320	65	12.6	61	12.7	142	12.5	0	1.14	.08	1	.230	1.54	.163	.939	515	.44	.08	.14
76	1320	142	12.5	137	12.6	217	12.6	0	1.95	.08	1	.230	1.54	.054	.965	392	.54	.16	.11
75	1320	217	12.6	212	12.6	---	---	0	2.16	.08	1	.230	1.54	.038	.978	337	.60	.08	.09
112	1320	613	12.6	613	12.6	---	---	0	1.87	.08	0	3.79	1.25	.002	1.000	101	1.00?	.00	.00

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 69	2.61	
ALTERNATE 1		340.57
STRUCTURE 59	1.27	
ALTERNATE 1		370.00
STRUCTURE 43	3.41	
ALTERNATE 1		516.79
STRUCTURE 33	.97	
ALTERNATE 1		93.45
STRUCTURE 8	1.31	
ALTERNATE 1		252.52
XSECTION 1	.15	
ALTERNATE 1		248.49
XSECTION 2	.10	
ALTERNATE 1		165.73
XSECTION 3	.93	
ALTERNATE 1		1124.09
XSECTION 4	.05	
ALTERNATE 1		66.46
XSECTION 5	.18	
ALTERNATE 1		146.42
XSECTION 6	.65	
ALTERNATE 1		899.04
XSECTION 7	.13	
ALTERNATE 1		101.47
XSECTION 8	1.31	
ALTERNATE 1		1308.14
XSECTION 9	.03	
ALTERNATE 1		34.71

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 10	.06	
ALTERNATE 1		63.50
XSECTION 11	.19	
ALTERNATE 1		171.16
XSECTION 12	.38	
ALTERNATE 1		394.33
XSECTION 13	.41	
ALTERNATE 1		408.94
XSECTION 14	2.09	
ALTERNATE 1		1103.09
XSECTION 15	.19	
ALTERNATE 1		224.76
XSECTION 16	.12	
ALTERNATE 1		155.97
XSECTION 17	.06	
ALTERNATE 1		101.41
XSECTION 18	.18	
ALTERNATE 1		171.98
XSECTION 19	.02	
ALTERNATE 1		37.85
XSECTION 20	.06	
ALTERNATE 1		110.00
XSECTION 21	.36	
ALTERNATE 1		455.32
XSECTION 22	.15	
ALTERNATE 1		212.40
XSECTION 23	.09	
ALTERNATE 1		154.39

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 24	.00	
ALTERNATE 1		53.00
XSECTION 25	.15	
ALTERNATE 1		188.52
XSECTION 26	.00	
ALTERNATE 1		53.00
XSECTION 27	2.49	
ALTERNATE 1		1463.21
XSECTION 28	.00	
ALTERNATE 1		21.00
XSECTION 29	.13	
ALTERNATE 1		128.47
XSECTION 30	.15	
ALTERNATE 1		127.06
XSECTION 31	.08	
ALTERNATE 1		99.02
XSECTION 32	.26	
ALTERNATE 1		193.67
XSECTION 33	.31	
ALTERNATE 1		156.44
XSECTION 34	.13	
ALTERNATE 1		141.66
XSECTION 35	.25	
ALTERNATE 1		281.75
XSECTION 36	.53	
ALTERNATE 1		465.96
XSECTION 37	.50	
ALTERNATE 1		355.99

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 38	.13	
ALTERNATE 1		167.08
XSECTION 39	.06	
ALTERNATE 1		80.11
XSECTION 40	.31	
ALTERNATE 1		397.19
XSECTION 41	.32	
ALTERNATE 1		412.55
XSECTION 42	.40	
ALTERNATE 1		519.87
XSECTION 43	.00	
ALTERNATE 1		206.67
XSECTION 44	.13	
ALTERNATE 1		182.98
XSECTION 45	.64	
ALTERNATE 1		498.61
XSECTION 46	.16	
ALTERNATE 1		166.54
XSECTION 47	.11	
ALTERNATE 1		127.59
XSECTION 48	.16	
ALTERNATE 1		178.58
XSECTION 49	.09	
ALTERNATE 1		146.94
XSECTION 50	.33	
ALTERNATE 1		394.21
XSECTION 51	.49	
ALTERNATE 1		428.63

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 52	.39	
ALTERNATE 1		421.29
XSECTION 55	1.27	
ALTERNATE 1		1078.87
XSECTION 56	.46	
ALTERNATE 1		445.07
XSECTION 57	.07	
ALTERNATE 1		75.32
XSECTION 59	.12	
ALTERNATE 1		105.64
XSECTION 66	1.33	
ALTERNATE 1		381.49
XSECTION 67	1.52	
ALTERNATE 1		634.16
XSECTION 69	2.61	
ALTERNATE 1		1629.04
XSECTION 75	2.86	
ALTERNATE 1		613.58
XSECTION 76	.19	
ALTERNATE 1		219.20
XSECTION 77	1.03	
ALTERNATE 1		968.33
XSECTION 78	.96	
ALTERNATE 1		920.08
XSECTION 79	.13	
ALTERNATE 1		142.30
XSECTION 80	.00	
ALTERNATE 1		166.00

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 81	.00	
ALTERNATE 1		154.00
XSECTION 82	.44	
ALTERNATE 1		502.11
XSECTION 83	2.36	
ALTERNATE 1		402.98
XSECTION 84	1.24	
ALTERNATE 1		186.51
XSECTION 85	3.47	
ALTERNATE 1		520.68
XSECTION 86	.06	
ALTERNATE 1		90.81
XSECTION 87	.13	
ALTERNATE 1		162.32
XSECTION 88	.38	
ALTERNATE 1		461.63
XSECTION 89	.05	
ALTERNATE 1		62.16
XSECTION 90	.23	
ALTERNATE 1		297.37
XSECTION 91	.13	
ALTERNATE 1		169.21
XSECTION 92	1.29	
ALTERNATE 1		229.82
XSECTION 93	.00	
ALTERNATE 1		265.00
XSECTION 94	.40	
ALTERNATE 1		256.69

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 95	.00	
ALTERNATE 1		265.00
XSECTION 96	.00	
ALTERNATE 1		265.00
XSECTION 97	.31	
ALTERNATE 1		365.12
XSECTION 98	2.22	
ALTERNATE 1		891.96
XSECTION 99	2.32	
ALTERNATE 1		956.00
XSECTION 100	.08	
ALTERNATE 1		108.52
XSECTION 101	.42	
ALTERNATE 1		507.15
XSECTION 102	.48	
ALTERNATE 1		517.63
XSECTION 103	.08	
ALTERNATE 1		112.17
XSECTION 104	6.97	
ALTERNATE 1		4566.26
XSECTION 105	1.24	
ALTERNATE 1		186.51
XSECTION 106	2.42	
ALTERNATE 1		468.76
XSECTION 107	9.66	
ALTERNATE 1		5388.14
XSECTION 108	9.68	
ALTERNATE 1		5418.26

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 112	2.86	
ALTERNATE 1		613.58
XSECTION 123	.21	
ALTERNATE 1		359.53
XSECTION 124	4.99	
ALTERNATE 1		3957.48
XSECTION 125	1.19	
ALTERNATE 1		1617.99
XSECTION 126	.84	
ALTERNATE 1		1150.40
XSECTION 127	.33	
ALTERNATE 1		390.23
XSECTION 128	.04	
ALTERNATE 1		47.02
XSECTION 129	.14	
ALTERNATE 1		199.00
XSECTION 130	.03	
ALTERNATE 1		50.77
XSECTION 131	.68	
ALTERNATE 1		909.94
XSECTION 132	.14	
ALTERNATE 1		222.42
XSECTION 133	.22	
ALTERNATE 1		359.92
XSECTION 134	1.08	
ALTERNATE 1		1450.39
XSECTION 135	.04	
ALTERNATE 1		72.26

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 136	.07	
ALTERNATE 1		113.55
XSECTION 137	.08	
ALTERNATE 1		88.26
XSECTION 138	.27	
ALTERNATE 1		384.43
XSECTION 139	3.49	
ALTERNATE 1		2056.01
XSECTION 140	.64	
ALTERNATE 1		621.55
XSECTION 141	.44	
ALTERNATE 1		371.68
XSECTION 142	.00	
ALTERNATE 1		265.00
XSECTION 143	3.41	
ALTERNATE 1		2127.37
XSECTION 144	.09	
ALTERNATE 1		104.56
XSECTION 145	.97	
ALTERNATE 1		119.61
XSECTION 146	.12	
ALTERNATE 1		148.20
XSECTION 147	.05	
ALTERNATE 1		71.26
XSECTION 148	.03	
ALTERNATE 1		45.22
XSECTION 149	.17	
ALTERNATE 1		150.51

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 150	.00	
ALTERNATE 1		13.00
XSECTION 151	.00	
ALTERNATE 1		67.00

END OF 1 JOBS IN THIS RUN

INPUT FILE LISTING

```
1 EAST FORK CAVE CREEK                          BY: NBS/LOWRY
2 ANALYSIS OF DETENTION BASIN #5                FILENAME: 9TH.SP2
3 9TH STREET STORMDRAIN; DB5 - DB2              JOB NO: P79-086-016
O   2955.46 371.09  7                              388.84
    2966.36 371.10  7      .015                                89.856
    3044.90 371.18  7      .015                                 45.
    3576.75 371.71  7      .015                                              1
X   3583.25 371.91  5  3   .015  179.0            373.16        90.
    3753.25 373.88  5      .015
    4996.75 381.38  5      .015                                              2
X   5003.25 382.38  4  1   .015   74.0            383.63        90.
    5929.13 386.01  4      .015                                              2
    5986.73 387.02  4      .015                                 66.
    5991.73 387.10  4      .015
H                   4
```

SP

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIERS	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	4			4.00														
CD	2	4			5.00														
CD	3	4			5.50														
CD	4	4			6.50														
CD	5	4			8.00														
CD	6	4			9.00														
CD	7	4			10.00														

WATER SURFACE PROFILE - TITLE CARD LISTING

EADING LINE NO 1 IS -

EAST FORK CAVE CREEK BY: NBS/LOWRY

EADING LINE NO 2 IS -

ANALYSIS OF DETENTION BASIN #5 FILENAME: 9TH.SP2

EADING LINE NO 3 IS -

9TH STREET STORMDRAIN; DB5 - DB2 JOB NO: P79-086-016

WATER SURFACE PROFILE - ELEMENT CARD LISTING

```
ELEMENT NO   1 IS A SYSTEM OUTLET     *         *     *
                U/S DATA   STATION    INVERT  SECT                                W S ELEV
                             2955.46  371.09    7                                  388.84

ELEMENT NO   2 IS A REACH             *         *     *
                U/S DATA   STATION    INVERT  SECT              N                           RADIUS  ANGLE  ANG PT  MAN H
                             2966.36  371.10    7              .015                              .00  89.86     .00     0

ELEMENT NO   3 IS A REACH             *         *     *
                U/S DATA   STATION    INVERT  SECT              N                           RADIUS  ANGLE  ANG PT  MAN H
                             3044.90  371.18    7              .015                              .00  45.00     .00     0

ELEMENT NO   4 IS A REACH             *         *     *
                U/S DATA   STATION    INVERT  SECT              N                           RADIUS  ANGLE  ANG PT  MAN H
                             3576.75  371.71    7              .015                              .00    .00     .00     1

ELEMENT NO   5 IS A JUNCTION          *         *     *     *                *                 *              *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                             3583.25  371.91    5     3     0   .015    179.0       .0   373.16      .00  90.00     .00

ELEMENT NO   6 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                           RADIUS  ANGLE  ANG PT  MAN H
                             3753.25  373.88    5              .015                              .00    .00     .00     0

ELEMENT NO   7 IS A REACH             *         *     *
                U/S DATA   STATION    INVERT  SECT              N                           RADIUS  ANGLE  ANG PT  MAN H
                             4996.75  381.38    5              .015                              .00    .00     .00     2

ELEMENT NO   8 IS A JUNCTION          *         *     *     *                *                 *              *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                             5003.25  382.38    4     1     0   .015     74.0       .0   383.63      .00  90.00     .00

ELEMENT NO   9 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                           RADIUS  ANGLE  ANG PT  MAN H
                             5929.13  386.01    4              .015                              .00    .00     .00     2

ELEMENT NO  10 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                           RADIUS  ANGLE  ANG PT  MAN H
                             5986.73  387.02    4              .015                              .00  66.00     .00     0

ELEMENT NO  11 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                           RADIUS  ANGLE  ANG PT  MAN H
                             5991.73  387.10    4              .015                              .00    .00     .00     0

ELEMENT NO  12 IS A SYSTEM HEADWORKS                *                    *
                U/S DATA   STATION    INVERT  SECT                                W S ELEV
                             5991.73  387.10    4                                      .00
```

WATER SURFACE PROFILE - ELEMENT CARD LISTING

IO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

'* WARNING NO. 2 ** - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN HDWKDS, W.S.ELEV = INV + DC

WATER SURFACE PROFILE LISTING

EAST FORK CAVE CREEK
ANALYSIS OF DETENTION BASIN #5
9TH STREET STORMDRAIN; DB5 - DB2

BY: NBS/LOWRY
FILENAME: 9TH.SP2
JOB NO: P79-086-016

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
2955.46	371.09	17.75	388.84	634.0	8.07	1.01	389.85	.00	6.04		10.00	.00	.00	0	.00
10.90	.00092					.00196	.02			10.00			.00		
2966.36	371.10	17.96	389.06	634.0	8.07	1.01	390.08	.00	6.04		10.00	.00	.00	0	.00
78.54	.00102					.00196	.15			10.00			.00		
3044.90	371.18	18.18	389.36	634.0	8.07	1.01	390.37	.00	6.04		10.00	.00	.00	0	.00
531.85	.00100					.00196	1.04			10.00			.00		
3576.75	371.71	18.74	390.45	634.0	8.07	1.01	391.46	.00	6.04		10.00	.00	.00	0	.00
UNCT STR	.03077					.00264	.02						.00		
3583.25	371.91	19.04	390.95	455.0	9.05	1.27	392.22	.00	5.43		8.00	.00	.00	0	.00
170.00	.01159					.00331	.56			4.16			.00		
3753.25	373.88	17.63	391.51	455.0	9.05	1.27	392.79	.00	5.43		8.00	.00	.00	0	.00
1243.50	.00603					.00331	4.12			5.13			.00		
4996.75	381.38	14.38	395.76	455.0	9.05	1.27	397.04	.00	5.43		8.00	.00	.00	0	.00
UNCT STR	.15385					.00517	.03						.00		
5003.25	382.38	13.23	395.61	381.0	11.48	2.05	397.65	.00	5.22		6.50	.00	.00	0	.00
925.88	.00392					.00703	6.51			6.50			.00		
5929.13	386.01	16.31	402.32	381.0	11.48	2.05	404.37	.00	5.22		6.50	.00	.00	0	.00
57.60	.01753					.00703	.40			3.75			.00		
5986.73	387.02	16.06	403.08	381.0	11.48	2.05	405.12	.00	5.22		6.50	.00	.00	0	.00
5.00	.01600					.00703	.04			3.87			.00		
5991.73	387.10	16.01	403.11	381.0	11.48	2.05	405.16	.00	5.22		6.50	.00	.00	0	.00

371.09 + 17.75 + 1.01 =
= 389.85 –
EGL
∴ HGL = 388.84